Seattle Urban Area Security Initiative Region

Disaster Debris Management Plan

Updated May 2010

Prepared by

CRI+IGEN

917 Pacific Ave Suite 600
Tacoma, WA 98408

Contents

Appendices

Tables

Figures

List of Preparers

Agency/Organization	Name of Preparer
Allied Waste Services	Joe Casalini
City of Bellevue	Rebecca Clark Chris Hagen
City of Bellevue Emergency Management	Steve Thomas
City of Bellevue Utilities Department	Tom Spille
Emergency Services Coordinating Agency	Chandra Fox Lyn Gross
City of Kent	Alex Senecaut Bill Thomas
Federal Emergency Management Agency Region X	Andy Hendrickson
King County Solid Waste Division	Mike Long Jim Neely
King County Office of Emergency Management	Kathryn Howard
King County Zone One Coordinator	Mike Ryan
King County Zone Three Coordinator	Dominic Marzano Ed Reed
LeMay, Inc.	Charlie Maxwell
Pierce County Recycling, Composting and Disposal	Rusty Cole
Pierce County Department of Emergency Management	Richard Schroedel
Pierce County Department of Public Works and Utilities	Steve Wamback Yvonne Reed
Pierce County Sheriff	Rustin Wilder
Puget Sound Clean Air Agency	Elizabeth Gilpin
Seattle Office of Emergency Management/King County Zone 5 Representative	Erica Lund
Seattle Public Utilities	Jeff Neuner Laurie Van Leuvan Robin Friedman
Port of Seattle	Rod Hilden
Public Health Seattle & King County	Jim Henriksen
Snohomish County Solid Waste	Leo Kypuros
Snohomish County Dept of Emergency Management	Stephen Hagberg Mark Murphy

Agency/Organization	Name of Preparer
Snohomish County Solid Waste	Deanna Carveth
Snohomish Health District	Aran Enger
Suburban Cities Association Representative	Gail Marsh
Tacoma Solid Waste Utility	Gary Kato
Tacoma-Pierce County Health Department	Andy Comstock John Sherman
United States Army Corps of Engineers	Gretchen Martinsen Mamie Brouwer
United States Environmental Protection Agency	Josie Clark
Washington Refuse and Recycling Association	Brad Lovaas
Washington State Department of Ecology	Peter Christiansen
Washington State Department of Transportation	John Himmel
Washington State Emergency Management Division	Chuck Hagerhjelm Dave Hall
Washington Utilities and Transportation Commission	Layne Demas Gene Eckhardt Penny Ingram
Waste Connections	Keith Kovalenko
Waste Management	Steve Goldstein Susan Robinson

Glossary

Critical Infrastructure: Assets, systems, and networks, whether physical or virtual, so vital that their incapacitation or destruction would have a debilitating effect on security, economic security, public health or safety.

Debris-causing Incident: An unplanned incident caused by natural or human means that creates debris.

Debris Clearance: Clearing roads and other critical infrastructure by pushing debris to the roadside to accommodate emergency traffic.

Debris Monitoring: Actions taken by applicants in order to document eligible quantities and reasonable expenses during debris activities to ensure that the work complies with the contract scope-of-work and/or is eligible for Public Assistance grant reimbursement.

Debris Removal: Picking up debris and taking it to a Temporary Debris Sorting and Reduction (TDSR) site, composting facility, recycling facility, permanent landfill, or other reuse or end-use facility.

Disaster Debris: Items and materials broken, destroyed, or displaced by a natural or human-caused disaster. Examples of debris include, but are not limited to, vegetative waste, construction and demolition material, and personal property. *See Section Six: Debris Classification, for the definitions of specific debris types.*

Disaster Debris Management: Actions related to the management of disaster debris including assessment, clearance, removal, sorting, reduction, hauling, and disposal.

Force Account: The Federal Emergency Management Agency (FEMA) uses the term "Force Account" to refer to a jurisdiction's own personnel and equipment.

Hazardous Waste: Waste with properties that make it potentially harmful to human health or the environment. Hazardous waste is regulated under the Resource Conservation and Recovery Act (RCRA). In regulatory terms, a RCRA hazardous waste is a waste that (1) appears on one of the four hazardous wastes lists or (2) exhibits at least one of the following four characteristics: ignitability, corrosivity, reactivity, or toxicity. See http://www.epa.gov/osw/hazwaste.htm.

Initial Damage Assessment: The initial damage assessment is used to determine the magnitude and impact of an incident's damage. Also referred to as a "pre-Presidential Damage Assessment," it is often the first assessment a jurisdiction does to determine the impact of an incident.

Lifeline Transportation Route: Routes identified by a jurisdiction that provide primary access for emergency response, evacuation, and damage assessment.

Major Arterial: Moderate or high-capacity roads that provide direct service between communities or parts of larger cities and are needed to aid in response and recovery operations.

Minor Arterial: Routes that receive moderate traffic flow and carry a mix of local and through traffic.

National Response Framework: A framework developed to facilitate the delivery of all types of federal assistance to states following a disaster. It outlines the planning assumptions, policies, concept of operations, organizational structures, and specific assignments and agencies involved in federal assistance to supplement state, tribal, and local efforts.

Preliminary Damage Assessment (PDA): A joint assessment used to determine the magnitude and impact of an incident's damage. A FEMA/state team will usually visit local applicants and view their damage first-hand to assess the scope of the damage and estimate repair costs. The state uses the results of the PDA to determine if the situation is beyond the combined capabilities of the state and local resources and to verify the need for supplemental federal assistance. The PDA also identifies any unmet needs that may require immediate attention.

Recovery: The phase of emergency management that encompasses activities and programs implemented during and after response that are designed to return the entity to its usual state or to a "new normal."

Response: Activities that address the short-term, direct effects of an incident. Response includes immediate actions to save lives, protect property, and meet basic human needs. Response also includes the execution of emergency operations plans and mitigation activities designed to limit the loss of life, personal injury, property damage, and other unfavorable outcomes.

Right-of-Entry: The document by which a property owner confers to a jurisdiction or their contractor the right to enter onto private property for a specific purpose without committing trespass.

Right-of-Way: The portions of land over which facilities such as highways, railroads, or power lines are built. It includes land on both sides of the facility up to the private property line.

Seattle Urban Area Security Initiative (UASI) Region: Geographic region of King, Pierce, and Snohomish counties and the jurisdictions, special purpose districts, private and public organizations, cities, and tribes that make up the counties.

Solid Waste Collection Company: Private entities that provide daily municipal solid waste service through the transportation and/or disposal of solid waste.

Temporary Debris Sorting and Reduction (TDSR) Site: A location where debris is sorted, processed, reduced in volume, and/or disposed of.

UASI Debris Management Plan Sponsor: A solid waste agency in the Seattle UASI Region that maintains a Washington State Comprehensive Solid Waste Management Plan.

This includes Snohomish County Solid Waste Division, King County Solid Waste Division, Pierce County Public Works and Utilities, and Seattle Public Utilities Solid Waste Utility.

UASI Debris Management Plan Stakeholder: Any city, county, state, or tribal organization in the Seattle UASI Region that has an active role in debris management, including solid waste agencies, local emergency management entities, and local public health departments/districts.

Acronyms and Abbreviations

AAR	After-Action Report
APHIS	Animal, Plant and Health Inspection Service
CAMU	Corrective Action Management Unit
CDL	Construction, Demolition, and Land-clearing
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environment Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CRT	Cathode Ray Tube
DHS	Department of Homeland Security
DOD	Department of Defense
DOH	Department of Health
Ecology	Washington State Department of Ecology
EMAC	Emergency Management Assistance Compact
EPA	United States Environmental Protection Agency
ESF	Emergency Support Function
FCO	Federal Coordinating Officer
FEMA	Federal Emergency Management Agency
GA	General Administration
HHW	Household Hazardous Waste
HIVA	Hazard Identification and Vulnerability Assessment
HSPD	Homeland Security Presidential Directive
ICS	Incident Command System
ISO	International Organization for Standardization
JIC	Joint Information Center
JIS	Joint Information System
KCC	King County Code

LEPC	Local Emergency Planning Committee
LHWMP	Local Hazardous Waste Management Program
MOU	Memorandum of Understanding
MSW	Municipal Solid Waste
NEPA	National Environmental Policy Act
NGO	Nongovernmental Organization
NIMS	National Incident Management System
NRCS	Natural Resource Conservation Service
NRF	National Response Framework
NRP	National Response Plan
NWWARN	Northwest Warning Alert and Response Network
PCB	Polychlorinated Biphenyl
PDA	Preliminary Damage Assessment
PIO	Public Information Officer
PPDR	Private Property Debris Removal
PSCAA	Puget Sound Clean Air Agency
RCRA	Resource Conservation and Recovery Act
RCW	Revised Code of Washington
RHMP	Regional Hazard Mitigation Plan
ROE	Right-of-Entry
RPIN	Regional Public Information Network
SCC	Snohomish County Code
SME	Subject Matter Expert
Stafford Act	Robert T. Stafford Disaster Relief and Emergency Assistance Act
SWD	Solid Waste Division
TDSR Site	Temporary Debris Sorting and Reduction Site
TSCA	Toxic Substances Control Act
Seattle UASI Region	Seattle Urban Area Security Initiative Region
USACE	United States Army Corps of Engineers

U.S.C.	United States Code
USCG	United States Coast Guard
USDA	United States Department of Agriculture
WAC	Washington Administrative Code
WAEMD	Washington Emergency Management Division
WSP	Washington State Patrol
WUTC	Washington Utilities and Transportation Commission

1.0 Introduction

1.1 Mission

The Seattle Urban Area Security Initiative Region (Seattle UASI Region), composed of King, Pierce, and Snohomish counties and the core cities of Seattle and Bellevue, recognizes that natural and human-caused disasters have the potential to create debris that can disrupt the quality of life for citizens living in the Region, and that can complicate disaster response and recovery following such disasters. The Region also recognizes that planning for such disasters can lessen the impact on the community, economy, and the environment. This Disaster Debris Management Plan provides guidance to the Region that will help with planning, mobilizing, organizing, and controlling a disaster debris-causing incident. This guidance applies to all jurisdictional levels within the Region. Local officials are encouraged to review their community's vulnerability to a disaster and to plan how they and their regional partners would manage a debris clearance, removal, and disposal operation if the need arises.

1.2 Purpose

This Disaster Debris Management Plan is designed to assist emergency response and recovery staff with planning for and managing debris clearance, handling, and recycling or disposal. This plan identifies recommendations for regional priorities, roles, responsibilities, and resources to address debris-causing incidents that might overwhelm the normal capabilities of the Seattle UASI Region. This plan also includes a template for an operational plan in Appendix D, *Operational Debris Management Plan Template,* for jurisdictions to use when preparing their own operational plans.

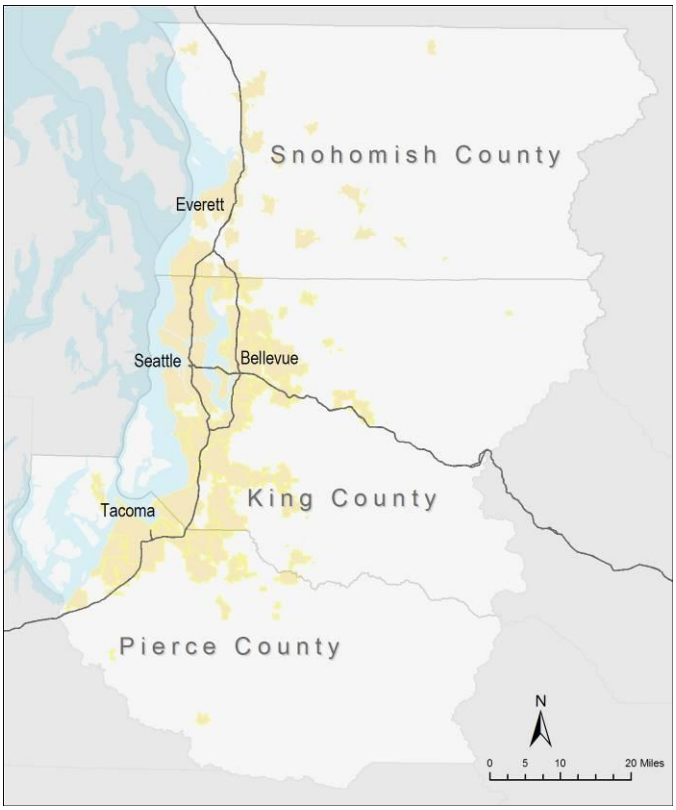

FIGURE 1-1: SEATTLE UASI REGION

1.3 Scope

This Disaster Debris Management Plan covers the geographic region of King, Pierce, and Snohomish counties (Figure 1-1), including individual jurisdictions, special purpose districts, private and public organizations, cities, and tribes within these counties. This plan describes regional priorities, roles, and responsibilities relating to disaster debris management, but does not address these issues at a local level. Operational plans should be developed by local jurisdictions to address the specific issues of their individual jurisdictions, special purpose districts, and tribal nations.

1.4 Alignment with Other Plans and Documents

1.4.1 National Response Framework

In February of 2003, Homeland Security Presidential Directive (HSPD) 5 directed the Secretary of Homeland Security to develop the National Incident Management System (NIMS) and the National Response Plan (NRP) to provide a consistent national approach for federal, state, and local governments to work effectively and efficiently during a domestic incident response. In March 2008, the NRP was revised and reissued as the National Response Framework (NRF). The NRF improves on the NRP by systematically incorporating public-sector agencies at all levels, the private sector, and nongovernmental organizations (NGOs). The NRF also emphasizes the importance of personal preparedness by individuals and households.

This plan supports the Emergency Support Functions (ESF) #3: Public Works and Engineering Annex, and ESF #14: Long-Term Community Recovery and Mitigation Annex of the Department of Homeland Security's (DHS) National Response Framework (DHS 2004a; 2004b) by providing for coordination of disaster debris operations through all levels of government using a NIMS organization structure.

1.4.2 Washington Comprehensive Emergency Management Plan

This Disaster Debris Management Plan supports the Washington Comprehensive Emergency Management Plan ESF #3: Public Works and Engineering Annex, and ESF #14: Long-Term Community Recovery and Mitigation Annex, by providing a framework to organize disaster debris operations through all levels of government. Currently, Washington state does not have a statewide plan for managing disaster debris incidents.

1.4.3 Operational Disaster Debris Management Plans for Individual Jurisdictions

This Disaster Debris Management Plan supports individual jurisdictions in the Seattle UASI Region by providing a framework and making recommendations that can be used by the jurisdictions to develop their own operational disaster debris management plans. This plan provides the jurisdictions with the flexibility to develop a plan that best addresses their individual needs, but still ensures continuity within the region.

1.5 Plan Organization

This plan consists of 14 chapters, and 12 appendices.

- Chapter 1 – Introduction: Outlines the mission, scope, and purpose of this plan and how this plan aligns with other documents. Summarizes the structure for the entire plan.
- Chapter 2 – Organization and Concept of Operations: Identifies the stakeholders in this Disaster Debris Management Plan, and discusses the roles of stakeholders and various outside agencies when implementing debris removal after a debris-causing incident.
- Chapter 3 – Legislation and Policies: Discusses federal, state, and local legislation, policies, and plans, including policies adopted by King, Snohomish and Pierce counties, that affect debris management in a disaster scenario.
- Chapter 4 – Debris Clearance, Processing, and Disposal Priorities: Discusses how to prioritize debris collection after a major or catastrophic debris-causing incident in a manner that will hasten incident response times, as well as short- and long-term recovery efforts.
- Chapter 5 – Types of Hazards: Discusses the types of natural or human-caused disasters that may occur in the Region.
- Chapter 6 – Types of Debris: Lists classifications of debris according to composition, source, and disposal methods.
- Chapter 7 – Regional Capacities: Outlines the Region's normal and surge capacity to handle waste.
- Chapter 8 – Disaster Debris Operations: Discusses the various steps that must be taken to respond to and recover from a debris-causing incident.
- Chapter 9 – Mutual Aid and Interlocal Agreements: Discusses various resources available through mutual aid or interlocal agreements.
- Chapter 10 – Contract Management and Pre-identified Contractors: Outlines the process for pre-qualifying debris removal contractors to ensure immediate availability of assistance after a debris-causing incident.
- Chapter 11 – Eligibility for Funding: Defines the current funding eligibility requirements for debris removal under the Federal Emergency Management Agency (FEMA) Public Assistance Program.
- Chapter 12 – Public Notification and Communication Plan: Discusses ways to communicate effectively with other jurisdictions and agencies, contractors, and the public before, during, and after a debris-causing incident.
- Chapter 13 – Staff Development and Responsibilities: Lists the staff who will be needed to manage debris removal in the event of a disaster, and describes the specific roles that jurisdictional staff may assume when planning, responding to, and recovering from a debris-causing incident.

- Chapter 14 – References: A list of the references used throughout this report.
- Appendix A – Additional Debris Resources
- Appendix B – Online Resources
- Appendix C – Debris Mitigation Strategies
- Appendix D –Operational Debris Management Plan Template
- Appendix E – Temporary Debris Sorting and Reduction Site Planning
- Appendix F – Sample Forms for Debris Tracking
- Appendix G – Example of Time and Materials Contract for Debris Removal
- Appendix H – Example of Unit Price Contract for Debris Removal
- Appendix I – Example of Lump Sum Contract for Debris Removal
- Appendix J – Example of Right-of-Entry Permit
- Appendix K – Washington Public Assistance Damage Assessment
- Appendix L – Mutual Aid Agreement Sample Template

2.0 Organization and Concept of Operations

This chapter identifies the sponsors and stakeholders of this Disaster Debris Management Plan and discusses the roles and responsibilities of the plan sponsors, stakeholders, and various outside agencies when maintaining the plan and implementing debris removal after a debris-causing incident.

2.1 Plan Administration

This plan is owned and managed by the Seattle UASI Region Disaster Debris Plan Sponsors. The Seattle UASI Region Disaster Debris Management Plan was accepted by the Plan Sponsors on March 20, 2008.

2.1.1 Identification of Plan Stakeholders and Sponsors

Plan stakeholders include city, county, state, and tribal organizations and entities in the Seattle UASI Region that have an active role in debris management, including municipal solid waste agencies, local emergency management entities, and local public health departments/districts. Stakeholders should be responsible for or have a major interest in disaster debris management. A subset of plan stakeholders, the Disaster Debris Management Plan sponsors (the "plan sponsors"), is composed of the four agencies that administer Washington State comprehensive solid waste management plans for their jurisdictions. These agencies include:

- Seattle Public Utilities Solid Waste Utility
- Snohomish County Solid Waste Division
- King County Solid Waste Division
- Pierce County Public Works and Utilities

The Seattle UASI Region Disaster Debris Management stakeholders that assisted in developing this plan are listed on page v of this plan.

2.1.2 Plan Administration Roles and Responsibilities of Plan Stakeholders

Stakeholder participation is voluntary, but active involvement from a wide range of stakeholders is key to ongoing success of the plan. Plan stakeholders (stakeholders) will participate in semiannual disaster debris management plan maintenance meetings. These meetings will be used to adjust and define the overall function of the plan and review changes and updates to the plan.

2.1.3 Plan Sponsorship

Plan sponsorship will rotate annually among the four plan sponsors (sponsors) indicated above. The sponsor will be responsible for identifying a location for the two semiannual meetings that year and developing the agendas for the following fall and spring meetings, and will have primary responsibility for any administrative duties during the plan year,

including maintenance and updates to the plan. For the two meetings that year, the sponsor, in coordination with the representative identified for each of the other two counties, will compile changes suggested by the stakeholders and will add these to the meeting agenda for discussion.

2.1.4 Plan Ownership and Maintenance

The stakeholders will meet semiannually to discuss items of regional disaster debris management significance and review any suggested changes proposed by all the stakeholders. Semiannual meetings will be hosted by the current sponsor; these meetings will be held in preparation for the winter storm season and the summer fire season. Following a debris management incident that impacts more than one jurisdiction in the Region, the current sponsor will contact the stakeholders to determine the need for a special meeting to discuss any newly identified disaster debris management issues. Based on the response from the stakeholders, the sponsor will decide if a special meeting is necessary or if concerns can be addressed at the next regularly scheduled meeting.

Suggested changes to the plan may be contributed by any stakeholder and will be submitted to the sponsor at least one month before the next semiannual meeting so that issues can be placed on the meeting agenda. The sponsor will send the meeting agenda, with any suggested plan changes, to all stakeholders two weeks prior to the meeting.

Plan changes will be accepted by the consensus of the four plan sponsors. The current plan sponsor will be responsible for (1) updating the plan in accordance with the changes accepted during the semiannual debris management maintenance meetings, and (2) sending meeting summaries to all the stakeholders.

2.1.5 Inclusion in After-Action Reports

Following an incident or event, if applicable, stakeholders should evaluate the performance of this plan as part of the development of their jurisdictional after-action report (AAR). Any suggested changes or adjustments to this plan should be brought to the next semiannual debris management maintenance meeting for consideration by the stakeholders and sponsors.

2.1.6 Inclusion in Regional Joint Debris Task Forces

Any debris-causing incident that requires a federal disaster declaration will trigger the creation of a regional joint debris task force by the Federal Emergency Management Agency (FEMA). Following such an incident, the current sponsor will work with the Washington Emergency Management Division (WAEMD) and the plan stakeholders to ensure at least one stakeholder is included in the regional joint debris task force.

2.2 Response to Debris-Causing Incidents

Jurisdictions in the Seattle UASI Region respond to emergencies daily using their own resources. They also rely on mutual aid and assistance agreements with neighboring jurisdictions when they need additional resources. When these jurisdictions cannot meet incident response needs with their own resources or with help available from other local jurisdictions, they may ask the state for assistance.

If additional resources beyond what the state can provide are required, the state may request assistance from other states through interstate mutual aid and assistance agreements such as the Emergency Management Assistance Compact (EMAC). Administered by the National Emergency Management Association, EMAC is a congressionally ratified organization that provides form and structure to the interstate mutual aid and assistance process. (See Appendix B, *Online Resources*, for more information on the services provided by EMAC.) If an incident is beyond local and state capabilities, the governor can seek federal assistance. The state will collaborate with the impacted communities and the federal government to provide the needed help. Figure 2-1 shows the expected escalation of operations as an incident grows larger and exceeds a jurisdiction's ability to respond effectively.

2.2.1 Regional Debris Management Team Concept of Operations

Seattle UASI Disaster Debris Management Plan sponsors and stakeholders recognize that disasters do not follow political boundaries, and that small disasters can have an impact on the region. Following a debris management incident in the Seattle UASI area the plan sponsor from the county the incident occurred will contact the other three sponsoring agencies and evaluate how the UASI Disaster Debris Management Plan sponsors or stakeholders may assist in hastening response and recovery to the incident. Debris Management stakeholders within the Seattle UASI Region may also contact the current plan sponsor and request assistance. If strategies are identified to assist with the incident the current plan sponsor will contact the local agency directing response and recovery to offer their support.

2.3 Role of Debris Management Agencies

During a debris-causing incident, the following agencies may be directly involved in the management of debris.

2.3.1 Local Solid Waste and Public Works Agencies

Local solid waste agencies provide solid waste service to their communities through their own employees or via contract with a solid waste collection company. In a jurisdiction, this group is most likely to be tasked with creating an operational disaster debris management plan and directing disaster debris clearance and removal operations during an incident.

2.3.2 Local Emergency Management Agencies

Local emergency management agencies plan for, respond to, and mitigate the impact of hazards in order to protect the lives, property, economy, and environment of their jurisdictions. During a debris-causing incident, these agencies would provide planning and logistical support for disaster debris clearance and removal operations.

2.3.3 Local Public Health Agencies

Public health agencies manage programs and create regulations to protect citizens' health by limiting exposure to environmental hazards. During debris-causing incidents, public health agencies work with local solid waste agencies to protect public health. This may include

inspecting and approving temporary debris sorting and reduction (TDSR) sites, evaluating the enforcement of public health regulations to hasten debris response and recovery operations, and developing best practices to process and dispose of debris.

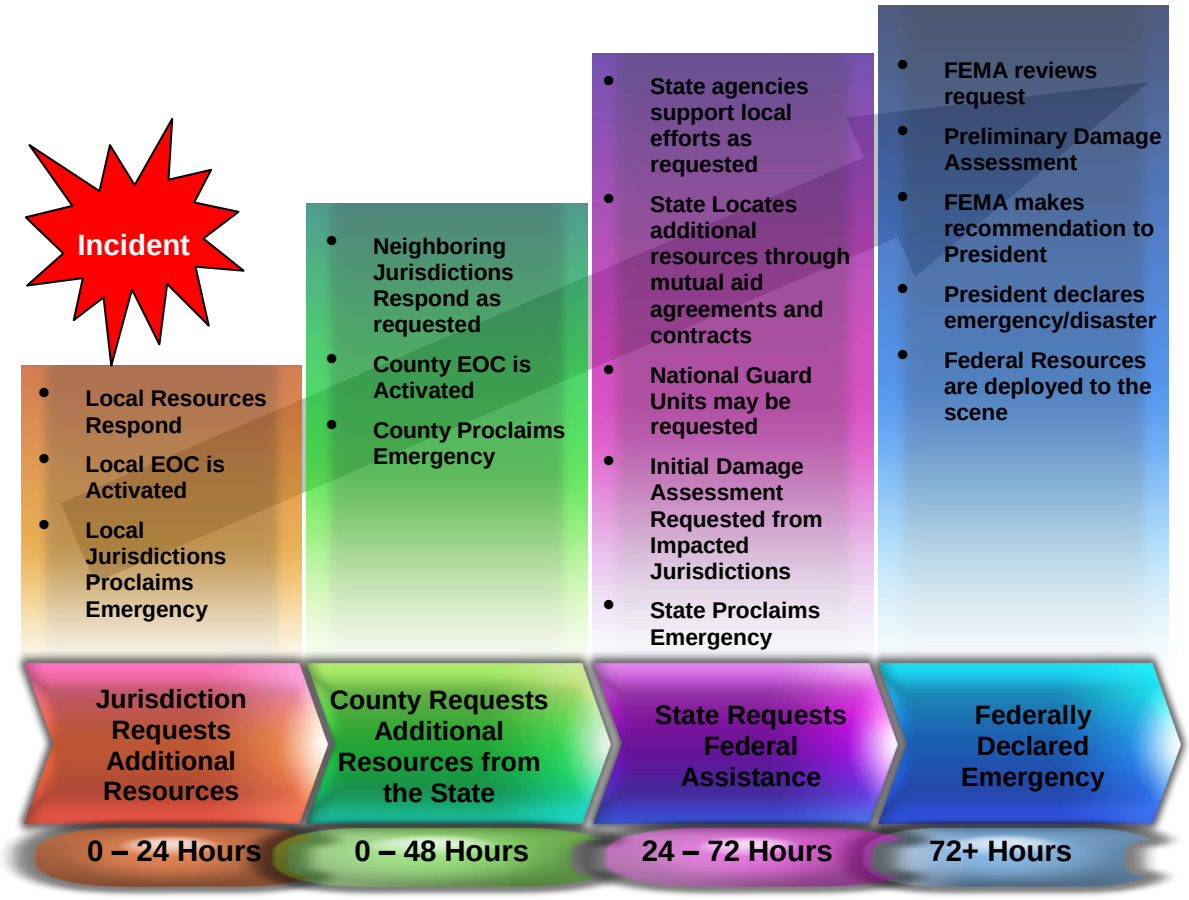

FIGURE 2-1
Response Concept of Operations

2.4 Roles of External Agencies

External agencies include local, state, federal, and tribal agencies that provide guidance or assistance in debris management planning and operations, but do not have a lead role at the local level. Depending on their mission, each external agency will have different roles and responsibilities related to debris management planning and operations.

2.4.1 Solid Waste Collection Companies

Solid waste collection companies are private entities that provide daily municipal solid waste service through the transportation and/or disposal of solid waste. During debris-causing incidents, these companies can be tasked with maintaining existing municipal solid waste service, as well as potentially providing additional resources to assist with debris clearance, processing, and disposal activities.

2.4.2 Debris Management Contractors

Debris management contractors may provide additional resources to assist with debris clearance, removal, separation, and disposal during debris-causing incidents. These contractors can be contracted with prior to an incident to ensure efficient response during or after the incident or event. Federal agencies such as the United States Army Corps of Engineers (USACE) and U.S. Environmental Protection Agency (EPA) may also have contract resources available to assist with debris management operations.

2.4.3 Washington State Department of Ecology (Ecology)

Ecology is responsible for the protection of Washington's environment. Ecology provides statewide regulation of municipal solid waste and hazardous waste. During a disaster, Ecology may support and advise local health departments and solid waste agencies, as needed, regarding disaster debris operations. Ecology may also issue temporary permits or recommend to the governor that certain regulations be suspended if necessary, to hasten response and recovery.

2.4.4 Washington State Department of Health (DOH)

The DOH manages programs and creates regulations to protect citizens' health by limiting exposure to environmental hazards. During a debris-causing incident, DOH will assist local health authorities as requested to ensure appropriate steps are being taken to maintain the health of the state's citizens and workers.

2.4.5 Washington State Emergency Management Division (WAEMD)

The WAEMD may assist local jurisdictions by facilitating the governor's disaster proclamations, facilitating EMAC requests, requesting Federal Disaster Declarations, and administering FEMA public and individual assistance requests. During the response phase of debris management, the WAEMD can ensure that facilities are operating in compliance with federal and state regulations and can determine priorities for handling/removal.

2.4.6 Washington State General Administration (GA)

GA is the primary state agency responsible for Emergency Support Function (ESF) #3: Public Works and Engineering under the Washington State Comprehensive Emergency Management Plan, which includes coordination of logistical and engineering support for state facilities. During a debris-causing incident, GA primarily supports state agencies, but would also provide resources to local requests that are coordinated through the Washington State Military Department, Division of Emergency Management.

2.4.7 Washington National Guard

The Washington National Guard may provide equipment, personnel, and technical assistance to protect the State of Washington. During debris-causing incidents, National Guard resources provide security for equipment staging and debris sorting and reduction sites, limited electrical power and sheltering, traffic control, and aerial reconnaissance. Washington National Guard resources are available after local resources have been exhausted through a request to the State Emergency Management Division.

2.4.8 Washington State Patrol (WSP)

WSP is the lead law enforcement agency within the state of Washington. During a debris-causing incident, WSP supports local law enforcement with evacuation of persons and property, coordination (along with the Washington Department of Natural Resources) of disaster firefighting and state firefighting resources through the Washington State Fire Mobilization Plan, and augmentation of local law enforcement resources.

2.4.9 Local Emergency Planning Committees (LEPC)

LEPCs were created as part of the Federal Emergency Planning and Community Right to Know Act. The primary mission of LEPCs is to assist in the development of plans, procedures, and public information material related to the routine and emergency handing of hazardous materials. Because debris-causing incidents have the potential to generate large amounts of hazardous debris, LEPC plans should be reviewed and incorporated into each jurisdiction's operational disaster debris management plans.

There are currently nine LEPCs in the Seattle UASI Region (U.S. EPA 2008), including:

- City of Kent
- City of Seattle
- Fort Lewis
- King County
- Pierce County
- Snohomish County
- Southwest Snohomish County

2.4.10 Puget Sound Clean Air Agency (PSCAA)

The PSCAA is responsible for regulating air quality in Puget Sound. During debris-causing disasters, the PSCAA provides advice on outdoor burning of debris and the removal and disposal of debris containing asbestos. They also provide information and possible monitoring of air quality for debris operations that create large quantities of dust. Depending on the disaster severity, PSCAA can suspend part or all of the Washington Clean Air Act or Regulations I, II, and III.

2.4.11 United States Department of Agriculture (USDA)

The USDA Natural Resource Conservation Service (NRCS) provides technical and financial assistance to private land owners, land users, communities, and state and local governments in planning and implementing conservation systems that conserves soil, water, and other natural resources. NRCS is limited in its authority with debris-related activities and is limited to either runoff retardation or soil erosion prevention in response to a sudden impairment in the watershed which creates an imminent threat to life or property. Typically, this includes debris within or in close proximity to a channel.

The USDA Animal, Plant and Health Inspection Service (APHIS) may provide support under the Veterinary Service Program and the Plant Protection and Quarantine Program. Both public and private lands are eligible under these programs, which provides assistance to federal and state agencies, tribes, local jurisdictions, and private landowners to manage

animal and plant health by collecting and providing information, conducting or supporting treatments, and providing technical assistance for planning and program implementation (removal).

2.4.12 United States Coast Guard (USCG)

The USCG, under the Ports and Waterways Safety Act (33 U.S.C. § 1221), is responsible for keeping waterways safe and open. While there is no specific language stating that the USCG is responsible for debris removal from waterways, the USCG has been tasked in the past to assist in waterway and marine transportation system recovery.

2.4.13 United States Department of Defense (DOD)

The Seattle UASI Region has numerous DOD facilities with equipment and personnel that may be requested in response to a debris-causing incident. Requests for these assets are coordinated through the Washington State Military Department, Division of Emergency Management and are only available after all local private and public resources have been exhausted or are soon to be exhausted.

2.4.14 United States Army Corps of Engineers (USACE)

The USACE is the lead agency for ESF #3, Public Works and Engineering, of the NRF, which includes debris management. During a Presidentially declared disaster, the USACE may supply technical assistance to local responders for completing debris removal. The USACE also has contract resources available to support local debris management operations.

2.4.15 United States Environmental Protection Agency (EPA)

EPA may provide technical assistance and advice on collection, reduction, and disposal of contaminated debris and other hazardous materials during debris management operations. EPA also has contract resources available to assist with collection, management, and disposal of hazardous materials.

2.4.16 Federal Emergency Management Agency (FEMA)

FEMA is the federal agency charged with coordinating emergency management functions in the federal government. In catastrophic disasters, FEMA may provide direct federal assistance to support local, tribal, and state governments in performing some of the activities related to debris clearance, removal, and disposal. The response capabilities of local, tribal, and state governments must be exceeded before this level of assistance can be provided. Following a Presidential declaration, FEMA may elect to use its mission assignment authority to task other federal agencies with debris clearance, including the USACE and EPA.

2.5 Interaction with Neighboring Jurisdictions

Disaster debris-causing incidents may have a regional scope that would require cooperation with jurisdictions outside the Seattle UASI Region. Coordinating debris management

incidents with neighboring jurisdictions will follow standard NIMS Incident Command System (ICS) protocols. If the Region's resources are overwhelmed by a disaster, it is possible that neighboring jurisdictions may provide resources. Jurisdictions within the Region should enter into mutual aid agreements to address resource gaps and ensure adequate resources and support following a disaster.

3.0 Legislation and Policies

This chapter discusses federal, state, and local legislation, policies, and plans. The section also includes policies adopted by King, Snohomish, and Pierce counties that affect disaster debris management planning, response, and recovery.

3.1 Federal Legislation and Policies Impacting Debris Operations

3.1.1 Application of Environmental Laws during the Response Phase of a Disaster and Possible Exemptions

In the event of a disaster, efforts should be made by responders to comply with all federal and state environmental regulations. However, due to the sudden onset of disasters and the need to respond quickly, preservation of public health and safety is paramount, which may result in the governor and FEMA invoking exemptions to regulations during the response phase of a disaster. When disaster debris operations move from response to recovery, all applicable federal, state, and local regulations should be followed.

There are currently 50 applicable exemptions to federal environmental laws. These exemptions typically allow either the President or the EPA Administrator to waive, suspend, or modify existing requirements. These exemptions are given on a case-by-case basis for emergencies, disasters, or matters of national security, or if the action is of paramount importance to the country (American Bar Association 2005). For example, the Stafford Act exempts immediate response actions from National Environmental Policy Act (NEPA) requirements (see the following section for more information). The Council on Environmental Quality's (CEQ) implementing regulations exempt emergencies and disasters from NEPA altogether, or from its environmental impact statement requirements. (Note that NEPA itself does not contain any exemptions.) In addition, all the federal laws listed in Table 3-1 below provide specific exemptions that can be invoked in the aftermath of disasters.

3.1.2 Application of Environmental Laws during the Recovery Phase of a Disaster and Possible Exemptions

Before initiating recovery efforts after a disaster, NEPA, and other applicable federal regulations must be addressed if any of the following conditions occur:

- Debris disposal other than to a permitted landfill
- Projects whose footprint differs from pre-disaster conditions
- Public assistance projects with hazard mitigation proposals
- Projects affecting a historic or potentially historic site or structure
- Projects affecting a current or proposed threatened or endangered species
- Projects affecting a wetland

TABLE 3-1: FEDERAL ENVIRONMENTAL LAWS AND WA STATE EQUIVALENT LEGISLATION

Federal Legislation	State Legislation
National Environmental Policy Act	Chapter 43.21C RCW, State Environmental Policy
Endangered Species Act	Title 77 RCW; Chapter 77.12.020 Designation of Threatened and Endangered Species; Chapter 77.85 RCW, Salmon Recovery
National Historic Preservation Act	Chapter 27.53 RCW, Archaeological Sites and Resources
Resource Conservation and Recovery Act	Chapter 70.95 RCW, Solid Waste Management – Reduction and Recycling
Comprehensive Environmental, Response, Compensation, and Liability Act	Chapter 70.105D RCW, Model Toxics Control Act
Coastal Zone Management Act	Chapter 90.58 RCW, Shoreline Management Act of 1971
Clean Water Act (Section 404)	Chapter 90.48 RCW, Water Pollution Control
Clean Air Act	Chapter 70.94 RCW, Washington Clean Air Act
Rivers and Harbors Act (Section 10)	No counterpart statue
Executive Order 11990, Wetlands Protection	WAC 365-190-080, Critical Areas
Executive Order 11988, Floodplain Management	Chapter 86.16 RCW, Floodplain Management
Executive Order 12898, Environmental Justice	No counterpart statue
Executive Order 12941, Seismic Safety	Chapter 38.52 RCW, Emergency Management

RCW = Revised Code of Washington
WAC = Washington Administrative Code

- Projects affecting a floodplain
- Cleanup and/or disposal of oil and hazardous materials
- Projects with known or suspected environmental concerns

The following actions, whether approved by the state or FEMA, must undergo an environmental review by FEMA before construction can begin:

- Improved projects
- Alternate projects
- Other projects in which the already approved scope of work has been changed

In the event of a federally proclaimed disaster and if FEMA provides federal funding, applicants must comply with federal environmental and historic preservation laws. Washington state has counterpart legislation for many of these federal environmental laws (state statutes modeled after federal statutes typically incorporate the federal requirements). These laws are listed in Table 3-1 below.

Exemptions to federal environmental laws can occur during the recovery phase only with specific guidance from FEMA. The following emergency work may be done without triggering federal environmental laws (Greenbook, FEMA and State of Washington 2003).

- Emergency actions (e.g., search and rescue, emergency care, issues of life and safety)
- Debris clearance (not necessarily disposal or storage/staging)
- Repair and restoration to pre-disaster conditions, provided there is no significant change in the construction footprint (unless the structure is older than 50 years)
- Temporary repairs (unless the structure is older than 50 years)

3.1.3 Stafford Act

The Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act) (as amended by Public Law 106-390 in 2000) is designed to simplify the process of providing federal assistance to state and local governments in the event of a natural disaster. The Stafford Act is an amended version of the Disaster Relief Act of 1974, which allows a Presidential Disaster Declaration in the case of an emergency. This declaration triggers financial and disaster response activities through FEMA.

The Disaster Mitigation Act of 2000 added a new provision to the Stafford Act. This provision emphasizes mitigation planning, and requires local governments to develop and submit mitigation plans as a condition of receiving Hazard Mitigation Grant Program and Pre-Disaster Mitigation Program funds. Mitigation planning is defined by FEMA as "any sustained action taken to reduce or eliminate long-term risk to life and property from a hazard event."

Excerpt from Stafford Act Regarding Statutory Exemptions to the National Environmental Policy Act (NEPA):

In responding to emergencies and major disasters, existing provisions of the Stafford Act or CEQ's regulations either statutorily exempt certain activities from NEPA or allow for alternative means of complying with CEQ's regulatory provisions. Certain response actions specifically excluded from NEPA by the Stafford Act (at 42 U.S.C. § 5159) include:

- The provision of certain federal resources or assistance essential to meeting immediate threats to life and property resulting from a major disaster. (See actions specified under 42 U.S.C. §§ 5170a and 5170b.)
- The repair, restoration, and replacement of public facilities or certain private non-profit facilities, damaged or destroyed by a major disaster. (See 42 U.S.C. § 5172.)
- Debris removal from public or private land after a major disaster. (See 42 U.S.C. § 5173.)

It is important to understand that, as with actions that are categorically excluded, an action statutorily excluded from NEPA is not exempt from the requirements of other environmental statutes. An agency would still be responsible for complying with all other applicable local, state, and federal laws and regulations relating to health, safety, and the environment. This would encompass federal environmental statutes including, among others: the Clean Air Act, the Clean Water Act, the Resource Conservation and Recovery Act (RCRA), the Coastal Zone Management Act, the Coastal Barrier Resources Act, the Endangered Species Act, and the National Historic Preservation Act.

In addition to statutory exclusions to NEPA, CEQ regulations allow for "alternative arrangements" in the event of an emergency. In such circumstances, the federal agency taking an action should consult with CEQ about what those arrangements may be and the time frame within which they must be completed. These alternative arrangements do not waive the requirement to comply with NEPA regulations, but establish an alternative means of compliance. Agencies and CEQ are to limit such arrangements to actions necessary to control the immediate impacts of the emergency.

3.2 State Legislation and Policies Impacting Debris Operations

3.2.1 Emergency Powers and Management

Washington state's governor can circumvent some normal operating procedures in the event of an emergency (Revised Code of Washington [RCW] 43.06.210, Emergency Powers). This regulation authorizes the governor to proclaim a "State of Emergency," which then allows for expeditious resource procurement and directs maximum use of state assets. Recommendations for a proclamation of emergency are generally made by the Director of the Military Department or from a state agency through the state Emergency Management Division. Many local jurisdictions have similar ordinances for expediting emergency resources procurement in the event of a locally proclaimed disaster.

RCW 38.52.040, Emergency Management, creates the Washington State Emergency Management Council; the Council provides the governor and the director of the Washington State Emergency Management Division (WAEMD) with an annual assessment of statewide emergency preparedness, including hazard mitigation, seismic safety improvements, flood hazards reduction, hazardous materials planning, and response activities. The objectives of the Emergency Management Council are to: (1) establish state funding sources to support emergency planning and mitigation efforts, and (2) increase public awareness and participation in emergency preparedness.

RCW 38.52.050(3)(a), Emergency Management, authorizes and empowers the governor to create, amend, and rescind the necessary orders, rules, and regulations to carry out the provisions in the event of a proclaimed emergency, with due consideration of the plans of the federal government. In comparison, state agencies have the authority to suspend rules stipulated in the Washington Administrative Code (WAC) that they have promulgated, but do not have the authority to waive statutes.

3.2.2 Air Quality

A potential method for debris disposal in an emergency is outdoor burning.

The Puget Sound Clean Air Agency (PSCAA) regulates air emissions in King, Snohomish, and Pierce counties. RCW 70.94, Clean Air Act. The Clean Air Act stipulates that, in general, outdoor burning is not allowed in any urban growth area or city with a population greater than 10,000 people, if state or federal air quality standards are exceeded, alternative disposal practices consistent with good solid waste management are reasonably available, or practices eliminating production of organic refuse are reasonably available. The Washington State Department of Ecology (Ecology), local air quality authorities (including the PSCAA), and local fire departments also discourage open burning as a primary disposal technique. Because of this, outdoor burning of disaster debris would be considered a last resort.

In extreme cases, the PSCAA may allow outdoor burning for the exclusive purpose of managing storm or flood-related debris. The regulations governing outdoor burning (WAC Chapter 173-425, Outdoor Burning) establish a permit program for limited burning that is applicable to storm or flood debris burning (RCW 70.94.743). "Storm or flood debris

burning" means fires consisting of natural vegetation deposited on lands by storms or floods that:

1. Have occurred in the previous 2 years;
2. Are the result of an emergency proclaimed by the city, county, or state government; and
3. Are burned on such lands by the property owner or his or her designee (RCW 70.94.743 (1)(c)).

The PSCAA also regulates hazardous particulates, including asbestos, and may examine the operations at temporary debris staging areas for dust suppression measures. A notice of intent to do any demolition work involving asbestos must be filed with the PSCAA. The PSCAA may also provide contractors with guidance relative to asbestos removal and disposal in the event of demolition of structures.

3.2.3 Solid Waste

RCW 70.95, Solid Waste Management – Reduction and Recycling, provides the overarching framework for establishing a comprehensive statewide program for solid waste handling. The statute addresses permitting of solid waste handling facilities and authorizes counties to prepare comprehensive solid waste management plans. The 1989 Waste Not Washington Act (ESHB 1671) revisions to RCW 70.95 established waste reduction and recycling as the priority methods of managing waste in the state.

There are two key implementing regulations for RCW 70.95 that address performance standards for solid waste facilities. Municipal solid waste landfills are regulated under Chapter 173-351 WAC, Criteria for Municipal Solid Waste Landfills. Chapter 173-350 WAC, Solid Waste Handling Standards replaces and expands upon Chapter 173-304 WAC, Minimum Functional Standards, and applies to energy recovery and incineration facilities, limited purpose landfills, inert landfills, composting facilities, land application sites, and intermediate solid waste handling facilities (e.g., transfer stations, drop boxes, piles for treatment and storage, surface impoundments and tanks, waste tire storage facilities, and moderate risk waste facilities). Chapter 173-350 WAC establishes reduction and recycling as priorities in handling solid waste over landfilling and incineration.

There are no state provisions in the regulations for addressing interim staging sites or temporary storage sites for sorting disaster debris. When developing a plan for identifying and permitting temporary disaster debris sites, the counties should rely on guidance for meeting solid waste standards specified in Chapter 173-350 WAC, as well as the local health department and district regulations.

3.2.4 Washington Utilities and Transportation Commission

The Washington Utilities and Transportation Commission (WUTC) regulates the collection and transportation of solid waste from commercial and residential customers in unincorporated areas of the state, and within cities and towns that do not contract for or provide solid waste collection services themselves (RCW 81.77). The WUTC does not regulate solid waste collection in a city that provides solid waste collection itself or contracts for solid waste collection within the city limits (RCW 81.77.020).

"Solid waste" includes collecting and transporting source-separated recyclable materials collected from residences, but does **not** include collecting or transporting recyclable materials by or on behalf of a commercial or industrial generator of recyclable materials to a recycler for use or reclamation. A solid waste collection company must have a certificate of public convenience and necessity issued by the WUTC to provide solid waste collection services (RCW 81.77.040).

The WUTC does not regulate as solid waste (RCW 81.77) the transportation of solid waste that is incidental to the overall purpose and intent of restoration, reclamation, or salvage services. The commission regulates that transportation under RCW 81.80. (Refer to Private Carriage, WAC-480-70-041, Commission Order M.V. No. 130721.)

The WUTC's authority is limited to the collection and transportation of solid waste (including source-separated recyclable materials collected from residences) from generators to the disposal or recycling site. The WUTC's authority does not extend to the transportation of solid waste from transfer stations identified in the county's comprehensive solid waste management plan (RCW 36.58.50). The WUTC's authority does apply to the transportation of solid waste from sites that are not identified in the county's comprehensive solid waste management plan (RCW70.95.090(1)).

The WUTC has an established process to receive and process "expedited solid waste applications" to meet urgent and immediate needs. The applicant would need to prove the services it wants to provide are in the public interest. If approved, the company would receive a certificate of public convenience and necessity to collect and transport solid waste for no more 30 days (WAC 480-70-136).

Chapter 8, *Disaster Debris Operations,* of this plan describes how solid waste is handled by jurisdictions within the Seattle UASI Region.

3.3 Local Legislation and Policies Impacting Debris Operations

3.3.1 King County

3.3.1.1 King County Code (KCC) Chapter 12.52, Emergency Powers

This code authorizes the King County executive to proclaim an emergency in the event of a disaster. The county executive is charged with directing the overall recovery efforts and ensuring that all state laws and county ordinances are enforced. KCC 030.B.3 authorizes the county executive to direct evacuation and/or clearing of debris and wreckage caused by an emergency or disaster from publicly and privately owned lands and waters.

3.3.1.2 King County Comprehensive Emergency Management Plan, Emergency Support Function 3 (ESF #3) for Public Works

This plan addresses how to handle surface water management, wastewater treatment, and solid waste management systems in unincorporated King County in the event of an emergency (King County 2003). The plan states that in an emergency, solid waste haulers will provide services as outlined in their emergency plans. Free disposal of solid waste is

determined by a motion of the King County Council and the county executive's office. The plan acknowledges that in the event of major damage to county-owned solid waste facilities, it may be beyond the capacity of the remaining system to handle all incoming solid waste. Individual jurisdictions in King County have similar comprehensive emergency management plans.

3.3.1.3 2001 King County Comprehensive Solid Waste Management Plan

Consistent with Chapter 70.95 RCW, waste reduction and recycling are the priority methods for managing King County's solid waste. The waste reduction and recycling policy (WRR-38) in the plan states that the county shall implement programs to provide for affordable collection and recycling of woody debris generated by major storms and for residents in areas affected by PSCAA burn bans.

King County banned construction debris, and land-clearing (CDL) waste at its facilities in 1993; CDL is directed to the private sector. The exception is small amounts of CDL delivered to county transfer stations by residential customers. These amounts are accepted only when delivered in vehicles without mechanical unloading (dump bed) capabilities.

An update to the plan is scheduled to be completed by King County at the end of 2008 and will address disaster debris management.

3.3.1.4 PUT 7-1-5 (PR) Waste Acceptance Rules for King County Solid Waste Division Solid Waste Handling Facilities (2005)

This policy document describes in detail the acceptance rules for a wide array of materials other than mixed municipal solid waste. Some wastes are accepted at the county transfer stations with conditions, some wastes require a waste clearance, and some materials are prohibited outright. In an emergency, the director of the Department of Natural Resources and Parks or his/her designee may authorize the disposal of materials that otherwise would require condition or clearance under this rule, which could pose a threat to public health or the environment if not disposed of immediately.

3.3.1.5 Code of the King County Board of Health Title 10, Solid Waste

Title 10 governs aspects of solid waste handling, collection, transporting, processing, treatment, utilization, and final disposal of all solid waste generated within King County. It also includes issuance of permits and enforcement (Section 10.02.020). Title 10 adopts Chapter 173-350 WAC as performance standards for solid waste facilities.

Title 10 does not specifically address disaster debris or regulatory requirements and criteria for TDSR sites. As such, a formal approval by Public Health Seattle & King County is not feasible at this time. However, under the general provisions of protecting and preserving public health in the context of solid waste emergency operations, proposed TDSR sites must be reviewed and authorized by public health as part of the planning process and before being activated. This includes all phases of TDSR site selection, activation, operation, and closure as recognized in the King County Disaster Debris Operating Plan (see next section for a description of this plan).

3.3.1.6 King County Disaster Debris Management Operating Plan – 2006 (Draft)

According to the operating plan, municipal solid waste disposal remains the responsibility of the King County Solid Waste Division in the event of a disaster.

Depending on the type and severity of the disaster, alternatives to standard collection and processing may be necessary. In the event of a proclaimed state of emergency, the governor is authorized to waive or exempt state statutes to allow for haulers not certificated by WUTC to handle the collection and transportation of disaster debris (RCW 38.52.050).

Temporary disposal sites may be required for short-term staging of materials, even if the current infrastructure remains essentially intact, because of the extraordinary volume of material often associated with disasters. The selection of these sites is dictated by the type of materials involved, volumes, transport access, and other factors. Materials handled at these staging areas may require collection and separation of specific materials for later recycling, volume reduction, or simply as a holding mechanism to allow the collection and disposal system to "catch up" with the demand. Sites may be designated by the type of material they receive.

The operating plan identifies potential temporary debris collection staging areas or sites. Staging areas must be appropriate to the type of material to be handled, accessibility, volumes, and anticipated holding times. The King County Solid Waste Division, with concurrence from the Health Department and Ecology, is responsible for designating these staging areas. Activation of the sites requires that each be appropriately staffed, including systems for load checking and determining waste amounts, either by volume or weight.

When the emphasis shifts to collection, handling, and/or disposal during the later stages of disaster response and recovery, the operating plan recognizes that private haulers and contractors will continue to serve as the primary force for collecting and transporting municipal solid waste, recyclables, and CDL. The operating plan underscores the high priority given to diversion programs to reduce impacts on landfills and to maximize reuse and recycling of debris. The King County Recycling Policy (KCC 10.04.020) states that:

> It is King County's goal to achieve maximum feasible reduction of solid wastes going into its landfills and other processing facilities by diverting as much as possible from the waste stream. It is recognized that waste reduction and recycling are the highest priority of the viable solid waste management options.

In the event of a disaster, waste reduction and recycling should be attempted as long as life safety and the environment can be preserved. Due to potential contamination, waste characterization will be an important issue during a disaster since contaminated materials cannot be recycled.

3.3.1.7 King County Regional Hazard Mitigation Plan (2004)

King County developed its first Regional Hazard Mitigation Plan (RHMP) in partnership with participating cities, school districts, utility districts, and emergency service providers. This effort was one step in creating a community that is more resilient to natural, technological, and societal hazard events and disasters. The RHMP provides the

groundwork for obtaining financial assistance for recovery operations from FEMA under the Stafford Act.

3.3.1.8 Local Hazardous Waste Management Program

The Local Hazardous Waste Management Program (LHWMP) brings together resources from four local government agencies and thirty-seven suburban cities to protect and enhance public health and environmental quality by reducing threats posed by the production, use, storage, and disposal of hazardous materials. The LHWMP is a regional partnership comprised of King County Water and Land Resources Division, King County Solid Waste Division, Seattle Public Utilities, Public Health—Seattle and King County, and the Suburban Cities Association. This program was established in 1990 with the adoption of the Local Hazardous Waste Management Plan for Seattle and King County.

The LHWMP provides a broad range of services that helps residents, businesses, agencies, and other organizations reduce and properly manage hazardous wastes. The LHWMP focuses on helping residents and businesses that are considered small quantity generators exempt from Washington's Dangerous Waste Regulations to use fewer and less toxic materials, properly use and store hazardous materials, and properly dispose of hazardous wastes.

3.3.2 Snohomish County

3.3.2.1 Emergency Powers

Snohomish County Code (SCC), Chapter 2.36, Emergency Management, authorizes formation of the Department of Emergency Management, and states that the Snohomish County executive has the authority to exercise emergency powers. This code allows the county executive to have general supervision and control of emergency county services in the event of an emergency or disaster.

3.3.2.2 Snohomish County Code, Chapter 7.41, Reduction or Elimination of Disposal Fees

SCC, Chapter 7.41, Operating Rules and Disposal Fees for Snohomish County Solid Waste Sites, authorizes the county executive to reduce or eliminate any or all disposal fees in the event of a state of emergency that has been proclaimed by a state of federal official (SCC 7.41.022).

3.3.2.3 Snohomish County Code, Chapter 3.04, Purchases and Contracts

The Snohomish County Council or the county executive is authorized to issue a notice to proceed for any debris management contractors working on behalf of the county under an emergency proclamation (SCC 3.04.200).

3.3.2.4 Snohomish County Comprehensive Solid Waste Management Plan (2004)

The plan does not specifically address the handling of disaster debris; however, it does acknowledge the priorities of waste reduction and recycling with source separation of recyclable materials as the top two priorities for handling solid waste.

3.3.2.5 Snohomish County Debris Management Plan (2008)

The plan contains a coordinated response and recovery blueprint for the county and Solid Waste Management Division to provide for efficient management of disaster debris following a debris-causing incident. While the plan identifies TDSR sites, it also recognizes that availability of these sites is subject to the location, size, and severity of the incident, which may render some of these sites unusable. Snohomish County is continuing to refine the plan and is adding more TDSR sites for consideration. The plan also gives Snohomish County the option to open and operate debris drop-off stations where residents can self-haul debris. The debris drop-off stations would be a completely separate operation from the county's current residential drop-box stations. This plan is scheduled to be finalized in 2009.

3.3.2.6 Snohomish County Health District

The Health District must be involved in all phases of TDSR site selection, activation, operation, and closure. A Health District representative must review the TDSR sites and authorize these sites prior to engaging in debris removal operations.

3.3.2.7 Snohomish County Natural Hazards Mitigation Plan (2005)

Under the provisions of the Disaster Mitigation Act (Public Law 106-390), Snohomish County, 12 cities, and 30 special purpose districts established this pre-disaster hazard mitigation plan. The plan provides the groundwork for obtaining financial assistance for recovery operations from FEMA under the Stafford Act.

3.3.2.8 Snohomish County Household Hazardous Waste Program

Snohomish County's Public Works Department has implemented a program for accepting hazardous waste from residents and businesses that are small quantity generators. The program identifies local resources that will accept and properly dispose of specific hazardous products that may be found in disaster debris.

3.3.3 Pierce County

3.3.3.1 Emergency Powers

Pierce County Code Title 2, Chapter 118, authorizes the formation of the Department of Emergency Management and gives the Director authority to request the Pierce County executive to proclaim an emergency.

3.3.3.2 Pierce County Solid Waste Plan (2000) and 2007 Supplement (Stepping Up to the Challenges)

The plan reiterates Washington State's priorities for waste reduction and recycling with source separation as a guiding principle in managing solid waste. As the first of seven integrated courses of action, the 2007 Supplement identifies the need to prepare debris management guidelines and a regional emergency waste management plan. Pierce County is in a unique position because it has the only landfill that is expected to continue operating after closure of King County's Cedar Hills Landfill. The privately owned LRI Landfill is not permitted to accept out-of county waste under normal circumstances, but there are provisions that allow for a waiver in an emergency.

3.3.3.3 Pierce County Natural Hazard Mitigation Plan (2004)

Similar to Snohomish County, the Pierce County Department of Emergency Management, in association with other planning partners, established this pre-disaster hazard mitigation plan in accordance with the provisions of the Disaster Mitigation Act (Public Law 106-390). The plan provides the groundwork for obtaining financial assistance for recovery operations from FEMA under the Stafford Act.

3.3.3.4 Tacoma-Pierce County Health Department

Tacoma-Pierce County Board of Health Regulation, Chapter 28, Solid Waste Handling Standards, adopts Chapter 173-350 WAC for performance standards for solid waste facilities. The Tacoma-Pierce County Board of Health has jurisdiction for issuing solid waste handling permits in the county. This regulation does not specifically address disaster debris or temporary sites for debris collection and sorting.

3.3.3.5 Pierce County Household Hazardous Waste Program

Pierce County's Public Works and Utilities Department has implemented a program designed to educate residents about proper handling and disposal of household hazardous materials. The program identifies local resources available to accept household hazardous materials that may be a component of disaster debris and to dispose of them properly.

3.3.4 City of Seattle

3.3.4.1 Seattle Comprehensive Solid Waste Plan (2004)

The City of Seattle owns and operates two recycling and transfer stations and manages a wide array of waste reduction, recycling, and composting programs for residential and business customers. The most recent comprehensive planning effort is documented in Seattle's Solid Waste Plan: On the Path to Sustainability, 2004 Plan Amendment (SPU 2004). Because the city has its own solid waste system and comprehensive plan, the city completed a Disaster Debris Management Plan in 2007.

3.3.4.2 Seattle Disaster Debris Management Plan (Final Draft) (2007)

The City of Seattle plan contains the blueprint for managing debris in the event of a disaster, including an operational plan, communications strategies, resources and logistics, training and exercises, and plan maintenance. The final plan will include identification of potential TDSR sites located throughout the city and a list of debris contractors that have been procured by the city.

4.0 Debris Clearance, Processing, and Disposal Priorities

Following a debris causing incident the debris removal process must be initiated promptly in order to protect public health and safety. This chapter provides guidance developed by the Seattle UASI Disaster Debris Management Team for the prioritization of debris clearance, processing, and disposal operations to improve incident response times, as well as short- and long-term recovery efforts. Each jurisdiction is encouraged to use this guidance along with knowledge from their local area to identify individual debris removal priorities for their area.

4.1 Methodology for Prioritizing Debris Clearance and Removal

The Seattle UASI Region has developed the following guidance for prioritizing debris removal:

1. Life Safety
2. Situation Stabilization
3. Property Protection
4. Economic Stability and Environmental Protection

4.2 Debris Clearance Priority List

The Seattle UASI Region has developed the following recommended priority list for debris clearance. When planning for debris clearance operations, jurisdictions should consider circumstances such as crime scene preservation and accident investigation that may require a delay of debris clearing until approved by local or federal law enforcement officials.

1. **Clear Emergency Access Routes – Lifelines**. Lifelines are those routes in a traffic network that provide access for emergency responders, alternate and evacuation routes, and damage assessment routes. Lifelines should include areas identified for potential staging, temporary shelters, and other resources available in the community that support emergency response.
2. **Clear Access to Critical Facilities and Infrastructure**. These are routes not included in priority one above that access assets, systems, and networks, whether physical or virtual, so vital that their incapacitation or destruction would have a debilitating effect on security, economic security, public health or safety. These typically include hospitals, fire stations, police stations, emergency operation centers, cellular and land-line telephone services, drinking water and power utilities, and sanitation facilities.

3. **Clear Major Freeways or Arterial Routes**. Moderate or high-capacity roads not included in priorities one or two above that provide direct service between communities or parts of larger cities and are needed to aid in response and recovery operations.
4. **Clear Areas Necessary for Movement of Goods and Services/Economic Restoration**. Those portions of the public transportation network not included in the above priorities and needed to effectively transport goods and services throughout the Region that are not included in one of the previous categories. These may include access to warehouses, airports, seaports, and major business districts.
5. **Clear Minor Arterial Routes**. Routes not included in one of the previous categories that receive moderate traffic flow and carry a mix of local and through traffic.
6. **Clear Local Routes**. These areas include those portions of the public transportation network in residential neighborhoods that are not included in one of the previous categories.

It is the responsibility of each jurisdiction to identify and map their jurisdiction's lifelines and access to critical facilities and infrastructure, and to identify debris clearance and removal priorities for their jurisdiction. When identifying lifeline routes and other debris clearance priorities, jurisdictions should work with their neighboring jurisdictions to ensure consistency across jurisdictional boundaries.

4.3 Debris Reduction and Disposal Priorities

During the initial response phase of any debris-causing incident, removal and processing of disaster debris will be based on the collection and removal priorities established in this chapter. It may be difficult to practice debris reduction and recycling techniques because efforts will be focused on preserving life, safety, and property. Once an incident has moved from the response phase to recovery phase, processing and disposal of debris should follow established guidelines for processing debris as documented in each jurisdiction's solid waste management plan in a manner that encourages reuse/recycling of material and limits the amount of material disposed in area landfills.

5.0 Types of Hazards

This chapter discusses the types of natural or human-caused incidents that may occur in the Seattle UASI Region (Table 5-1). The type and amount of debris produced by an incident depend on the magnitude, the duration, and the intensity of the incident itself. Because of specific regional hazards such as seiches, floods, and landslides, this is only a partial list of possible debris-causing incidents. Individual jurisdictions are responsible for consulting their local hazard identification and vulnerability assessment (HIVA) to determine specific incidents that pose the greatest threat to their area and have the potential to create the greatest amount of debris.

TABLE 5-1: CHARACTERISTICS OF DISASTER INCIDENTSPOSSIBLE IN THE SEATTLE UASI REGION[A]

Incident	Debris Characteristics	Regional Probability	Debris Impact
Wind Storm	Primarily vegetative waste; may also include construction/demolition materials from damaged or destroyed structures, some municipal solid waste from damaged structures. Extended power outages may result in large amounts of putrescible waste from private homes and grocery stores.	High	Moderate
Flooding	Construction/demolition waste, municipal solid waste, and problem waste, including sediment, vegetative waste, animal carcasses, and hazardous materials deposited on public and private property. Much of the debris from flooding incidents may be considered problem waste because of contamination from wastewater, petroleum, or other substances.	High	Moderate
Earthquake	Primarily construction/demolition waste and municipal solid waste intermixed with problem waste.	Moderate	High
Urban, Wildland, and Wildland/Urban Interface Fires	Burned vegetative waste, burned construction/ demolition waste, and problem waste, including ash and charred wood waste and ash-covered items.	Moderate	Low
Ice Storms	Primarily vegetative waste from broken tree limbs and branches. May also include construction/demolition waste and putrescible waste from extended power outages.	Moderate	Moderate
Volcano	Primarily ash, mud, and ash-covered items. May also include construction/demolition waste.	Low	High
Tsunami or Seiche	Sediment and construction/demolition waste possibly contaminated with problem waste, including wastewater, petroleum, or other hazardous materials.	Low	Moderate
Landslides	Sediments and construction/demolition waste possibly contaminated with problem waste.	High	High

TABLE 5-1: CHARACTERISTICS OF DISASTER INCIDENTSPOSSIBLE IN THE SEATTLE UASI REGION[A]

Incident	Debris Characteristics	Regional Probability	Debris Impact
Plant Disease	Variable amounts of vegetative debris that might require special handling as problem waste with specific disposal characteristics.	Low	Moderate
Animal Disease	Variable amounts of putrescible waste that might require special handling as problem waste with specific disposal instructions.	Low	Moderate
Nuclear, Chemical, or Biological Accident	Various amounts of contaminated soil, water, construction/demolition waste, and/or municipal solid waste that would require special handling as problem waste with specific disposal instructions.	High	Moderate
Nuclear, Chemical, or Biological Attack	Various amounts of contaminated soil, water, construction/demolition waste, and/or municipal solid waste that would require special handling as problem waste with specific disposal instructions.	Moderate	High

[a] Hazard data compiled from the 2004 King County Regional Hazard Mitigation Plan. High-probability incidents occur yearly, moderate probability incidents occur every 2 to 10 years, and low probability incidents occur once every 10 to 50 years.

6.0 Types of Debris

This chapter provides a partial list of debris descriptions that may require consideration during a debris-causing incident in the Seattle UASI Region. When developing an operational disaster debris management plan, each jurisdiction should consider any unique type of debris that is not included in Table 6-1, but may occur in their area.

TABLE 6-1: TYPES OF DEBRIS

Type	Description	
Construction Demolition Waste	FEMA 325[a] defines construction and demolition waste as damaged components of buildings and structures such as lumber and wood, gypsum wallboard, glass, metal, roofing material, tile, carpeting and floor coverings, window coverings, pipe, concrete, fully cured asphalt, equipment, furnishings, and fixtures. Plaster (i.e., sheetrock or plaster board) or other material likely to produce gases or a leachate during the decomposition process, asbestos, and lead may be found in construction and demolition waste.	
Municipal Solid Waste	WAC 173-350, Solid Waste Handling Standards, defines municipal solid waste as a subset of solid waste, which includes unsegregated garbage, refuse, and similar solid waste material discarded from residential, commercial, institutional, and industrial sources and community activities, including residue after recyclables have been separated.	
Problem Waste	Waste created by residential, commercial, or industrial sources that requires special handling before it can be disposed of. Problem waste is often found in the municipal waste stream, but may also be generated during remodeling, construction, demolition, or routine property maintenance activities. Examples of problem waste include the following:	
	Chemical, Biological, Radiological, and Nuclear-Contaminated Debris	Chemical, biological, radiological, and nuclear-contaminated debris resulting from a natural or human-caused disaster, such as a weapon of mass destruction incident.
	E-Waste	WAC 173-350 defines electronic waste as computers, computer monitors, televisions, and other electronics which contain CRTs (cathode ray tubes) and separated computer circuit boards that contain hazardous materials such as lead, cadmium, and mercury. These wastes are not to be disposed of a landfill.
	Hazardous Waste	WAC 173-303 defines hazardous waste as those solid wastes designated by 40 Code of Federal Regulations (CFR) Part 261, and regulated as hazardous and/or mixed waste by EPA.

TABLE 6-1: TYPES OF DEBRIS

Type		Description
	Household Hazardous Waste	WAC 173-350 defines household hazardous waste as any waste which exhibits any of the properties of dangerous wastes that is exempt from regulation under Chapter 70.105 RCW, Hazardous Waste Management, solely because the waste is generated by households. Household hazardous waste also includes other solid waste identified in the local hazardous waste management plan prepared pursuant to Chapter 70.105 RCW, Hazardous Waste Management. Examples of this include small quantities of normal household cleaning and maintenance products, latex and oil-based paint, cleaning solvents, gasoline, oils, swimming pool chemicals, pesticides, and propane gas cylinders.
	Human Remains	A body or part of a body of a deceased human being. Pursuant to RCW 68.50.010 the handling and disposal of human remains is the jurisdiction of the local coroner or medical examiner and is outside of the scope of this plan.
	Human Waste	Waste created predominately as a byproduct of digestion usually disposed of by a septic, wastewater, or sewer system. During an incident causing the failure of water or wastewater infrastructure, citizens may collect human waste in containers. This is considered biological waste and requires special handling during disposal. Section 8.4 of this plan provides information to consider prior to handling human waste.
	Infectious Waste	FEMA 325 defines infectious waste as waste capable of causing infections in humans, including contaminated animal waste, human blood and blood products, isolation waste, pathological waste, and discarded sharps (needles, scalpels, and broken medical instruments).
	Orphaned Tanks	Orphaned tanks, drums, and cylinders that contain unknown substances found in industrial settings. These wastes have been a significant problem during incidents that involve flooding.
	Putrescibles	WAC 173-350 defines putrescibles as solid waste which contains material capable of being readily decomposed by microorganisms and which is likely to produce offensive odors. This may include food waste and animal/livestock waste and carcasses (cows, chickens, etc.).
	Soil, Mud, and Sand	Large deposits of sand, mud, and soil that are often deposited after flooding or landslide incidents.
	Vegetative Waste	Whole trees, tree stumps, tree branches, plants, tree trunks, and other plant material.
	Vehicles and Vessels	Abandoned automobiles and floating watercraft located in public use areas.

TABLE 6-1: TYPES OF DEBRIS

Type	Description
White Goods	FEMA 325 defines white goods as discarded household appliances such as refrigerators, freezers, air conditioners, heat pumps, ovens, ranges, washing machines, clothes dryers, and water heaters.

[a]Source: FEMA (2007); see also Appendix B, *Online Resources*, for access information on the Debris Management Guide.

6.1.1 Hazardous Waste

Hazardous waste materials and hazardous waste are transported, used, and stored extensively throughout the Seattle UASI Region and could be released during a debris-causing incident. It is important for jurisdictions to work with their Local Emergency Planning Committees (LEPC) and consult their local hazardous materials mitigation plans to identify any special disaster debris management planning considerations. A listing of LEPCs in the Seattle UASI Region is included in Chapter 2, *Organizations and Concept of Operations*, of this plan.

6.1.2 Recycled Material

WAC 173-350 defines recyclable materials as those solid wastes that are separated for recycling or reuse, including, but not limited to, papers, metals, and glass, that are identified as recyclable material pursuant to a local comprehensive solid waste plan. It is important to note that many different types of debris can be recycled, but they are not considered "recyclables" unless they are actually recycled.

6.1.3 Comingled Waste

Debris-causing incidents such as floods and earthquakes often cause different types of waste to be mixed together contaminating other types of debris with household hazardous waste. This complicates processing and can prevent reuse, recycling, or other processing methods.

6.1.4 Crime Scene Evidence

Some debris-causing incidents may be the result of a confirmed or suspected criminal act, or debris may be located that contain potential evidence of a confirmed or suspected criminal act. Jurisdictions need to work with their local law enforcement agency to develop procedures to recognize and handle debris that contain potential evidence

7.0 Regional Capacities

This chapter summarizes the UASI regional solid waste handling, processing, and disposal capacities for the geographical areas of King, Pierce, and Snohomish counties using the existing waste stream (Table 7-1). While these are not regionally shared resources, this information is provided so that the region can identify at what level outside resources may be necessary in the event of a disaster debris-causing incident.

Table 7-2 includes an inventory of regional landfills that may be used to dispose of disaster debris following an incident. Ownership and administration of each landfill is different, and landfills may not be willing or able to accept debris following an incident.

Table 7-1 removed from this document to protect sensitive critical infrastructure information. Please Contact Kathryn Howard at King County OEM with questions. 206-205-4061

TABLE 7-2: REGIONAL LANDFILLS

Landfill Name	Owner	Type	Other Features	Rail Access	Capacity	Expected Life	Contact Info
Cedar Hills Regional Landfill	King County Solid Waste Division	Subtitle D Compliant (nonhazardous) Municipal Solid Waste Landfill Prohibited from accepting large volumes of CDL waste			9 million tons	2016	16645 228th Ave. SE Maple Valley, WA 98038
Chemical Waste Management of the Northwest	Waste Management Inc.	TSCA, RCRA, Non-RCRA, CERCLA CAMU Eligible Materials		Unknown			17629 Cedar Springs Lane Arlington, OR 97812 541-454-2030 Fax 541-454-3247
City of Tacoma Landfill	City of Tacoma	Subtitle D Compliant (nonhazardous) Municipal Solid Waste Landfill, Special Waste	Recycling Area	No	397,181 cubic yards remaining in the Central Area	Currently 2009 – anticipate extending to 2013 with required approvals.	3510 S. Mullen St. Tacoma, WA 98409 (253) 591-5543
Columbia Ridge Recycling and Landfill	Waste Management Inc.	Municipal Solid Waste Nonhazardous Special Waste Asbestos		Unknown			18177 Cedar Springs Lane Arlington, OR 97812 541-454-2030 Fax 541-454-3312
Graham Road Recycling & Disposal	Waste Management Inc.	Limited Purpose Facility Construction and Demolition Landfill Nonhazardous Special Waste	Recycling Area Crushed Concrete and Asphalt Resale	Unknown			1820 S. Graham Road Medical Lake, WA 99022 509-244-0151 Fax 509-244-0207
Greater Wenatchee	Waste Management	Subtitle D Compliant	Recycling Area	Unknown			191 Webb Road East Wenatchee, WA 98802

TABLE 7-2: REGIONAL LANDFILLS

Landfill Name	Owner	Type	Other Features	Rail Access	Capacity	Expected Life	Contact Info
Landfill	Inc.	(nonhazardous) Municipal Solid Waste Landfill					509-884-2802 Fax 509-884-3724
Hillsboro Landfill	Waste Management Inc.	Construction and Demolition Landfill Nonhazardous Special Waste All Principle Recyclable Materials (i.e., cardboard, newspaper, scrap metal, yard debris, wood wastes) Asbestos		Unknown			3205 SE Minter Bridge Road Hillsboro, OR 97123 503-640-9427 Fax 503-648-3942
LRI Landfill	Pierce County Recycling, Composting, Disposal LLC – dba LRI	Subtitle D Compliant (nonhazardous) Municipal Solid Waste		No	29.2 million cubic yards	2028	17925 Meridian Street East Puyallup, WA Main Office 253-847-7555 Fax 253-847-7713
Rabanco Roosevelt Regional Landfill	Rabanco Allied			Yes	120 million tons over 40 years		500 Roosevelt Grade Road Roosevelt, WA 99356, Klickitat County Phone: 1-800-275-5641
Riverbend Landfill	Waste Management Inc.	Subtitle D Compliant (nonhazardous) Municipal Solid Waste Landfill		Unknown		2027 – 2037	13469 SW Highway 18 McMinnville, OR 97128 503-472-8788 Fax 503-434-9770

CAMU = corrective action management unit
CDL = construction, demolition, and land-clearing
CERCLA = Comprehensive Environment Response, Compensation, and Liability Act
RCRA = Resource Conservation and Recovery Act
TSCA = Toxic Substances Control Act

8.0 Disaster Debris Operations

This chapter outlines the various steps that the Seattle UASI Region may take to respond to and recover from a debris-causing incident. Depending on the size and severity of the incident, these actions may be accomplished using local resources or may require assistance from contractors and outside jurisdictions. Disaster debris management operations generally include the following components:

- Damage assessment
- Debris clearance and removal
- Debris processing
- Debris hauling
- Debris disposal

8.1 Damage Assessment

Damage assessment is the systematic process of gathering preliminary estimates of disaster debris quantities and composition; damage costs; and general descriptions of the locale, type, and severity of damage sustained by both the public and private sectors. Initial damage assessments are usually completed within 36 hours of an incident by local, state, federal, and volunteer organizations and provide an indication of the loss and recovery needs. The initial damage assessment is the basis for determining the level of state and federal assistance needed, as well as the types of assistance necessary for recovery. The assessment and may take longer depending on the Region's ability to respond to life, safety, and property concerns. Information about the Washington Emergency Management Division's (WAEMD) Public Assistance Damage Assessment program, including the applicable forms to complete the assessment, are included in Appendix K, *Washington Public Assistance Damage Assessment*, of this plan.

The debris assessment should accomplish all of the following:

- Estimate the quantity and mix of debris.
- Estimate damage costs.
- Determine impact on critical facilities.
- Identify impact on residential and commercial areas.
- Identify what additional resources are needed for response and recovery.

8.1.1 FEMA Preliminary Damage Assessment

A preliminary damage assessment (PDA) report is a more detailed assessment that is completed following the initial damage assessment if it is suspected that the incident has or will overwhelm local resources and require federal assistance. The PDA serves two purposes, as follows:

- It provides reliable damage estimates, which are used as a basis in applying for assistance, and where justified, the governor's request for a Presidential Disaster Declaration.
- It provides for the effective implementation of state and federal disaster relief programs, if a Declaration is made.

The PDA is completed by a team of officials from FEMA, the Washington Emergency Management Division, county and local officials, and the U.S. Small Business Administration. Usually it takes approximately thirty days to complete and compile a PDA and route it through the Governor's office to FEMA. In severe cases FEMA may declare a disaster prior to completing the PDA.

8.2 Debris Clearance and Removal

Debris-clearing operations predominately focus on public roads and other critical infrastructure and should be prioritized based on the methodology in Chapter 4, *Debris Removal, Processing, and Disposal Priorities*, of this plan. Prior to contracting with these resources, jurisdictions should review the Washington Utilities and Transportation Commission (WUTC) regulations discussed in Chapter 3, *Legislation and Policies*, of this plan, along with additional contracting concerns detailed in Chapter 10, *Contract Management and Pre-identified Contractors*. Items to be considered during debris clearance and collection include the following:

- **Debris composition**: Commingling of debris creates problems with reduction and recycling techniques, which may impact future reimbursement. Whenever possible, immediate action should be taken to prevent or reduce commingling of debris during debris collection operations.
- **Location of debris**: There will often be different reimbursement and operational guidelines for debris clearance on public property and private residential and private commercial property. While debris clearance on private property is not usually a reimbursable expense, during past incidents, some jurisdictions have cleared debris from private property when it presents a health or safety risk to the community.
- **Right-of-Entry (ROE) form**: An ROE form must be completed in order to remove debris from private property. An ROE form must be signed by the homeowner before the jurisdiction representative can enter the property to complete the damage and debris assessment. The ROE form often contains a hold harmless agreement, which documents the property owner's promise that he or she will not bring legal action against the applicant if there is damage or harm done to the property. A sample ROE form is included in Appendix J, *Example of Right-of-Entry Permit*, of this plan.
- **Pre-established facilities for citizen debris drop-off**: Residents may be asked to bring disaster debris to collection sites for processing and disposal. If possible, the sites should remain at the same location for each debris-causing incident and should be included in the incident communication strategy. Facilities that can be used for drop-off facilities include debris drop boxes, TDSR sites, landfills, and transfer stations.

Appendix A, *Additional Debris Resources*, lists additional resources that can be used to collect and haul disaster debris following an incident. These firms are available on an emergency basis; however, to ensure rapid response, jurisdictions are encouraged to establish pre-positioned contracts for debris clearance and hauling prior to an emergency.

8.2.1 FEMA Mission Assignments

When an impacted state or local government does not have the capability required to respond to a Presidentially declared disaster, a request for Technical or Direct Federal Assistance may be made (FEMA 2007; see also Appendix B, *Online Resources*, for information on accessing this Web site). The approved request is called a Mission Assignment. A Mission Assignment is a work order issued by FEMA to another federal agency directing completion of a specific assignment in anticipation of, or response to, a Presidential declaration of a major disaster or emergency.

There are two Emergency Support Functions (ESFs) that perform debris-related activities under FEMA Mission Assignments:

- **ESF #3 – Public Works and Engineering** is responsible for infrastructure protection, emergency repair, and restoration. This group provides engineering services and construction management, and serves as a critical infrastructure liaison. The United States Corps of Engineers is the lead agency for ESF #3.
- **ESF #10 – Oil and Hazardous Material Response** is responsible for responding to oil and hazardous material issues, environmental safety, and short- and long-term cleanup. The two most commonly deployed agencies that deal with these debris-related activities are the United States Environmental Protection Agency (EPA) and the United States Coast Guard (USCG).

All Mission Assignments have the following requirements:

- The Mission Assignment must be requested by the state.
- The community must demonstrate that required disaster-related efforts exceed state and local resources.
- The scope of work must include specific quantifiable measurable tasks.
- FEMA must issue the Mission Assignment.

8.3 Debris Processing

Debris-causing incidents create a mix of debris that must be managed properly in order for a community to recover and return to normal. Often the processing, reduction, and disposal of debris extends long after the initial response period. If these actions are not planned for prior to a debris-causing incident, debris that could have been reused, recycled, or processed to reduce landfill impact may have to be disposed of in order to hurry recovery operations. Plans for processing disaster debris may also be affected by the type of disaster and the amount of contamination in the debris. For example, flood debris will often contain multiple types of waste, including household hazardous waste, that are impossible to sort.

Developing reuse, reduction, and disposal priorities prior to an incident will help to reduce an incident's impact on finite disposal resources. The following subsections provide categories of debris that call for different processing methods.

8.3.1 Recycling and Reuse

Recycling involves diverting material from the disposal stream and reusing it. The recycling of disaster debris is most often limited to metals, soil, and construction and demolition debris.

8.3.2 Metals

Most nonferrous and ferrous metal debris is suitable for recycling. Metal maulers and shredders can be used to shred trailer frames, trailer parts, appliances, and other metal items. Ferrous and nonferrous metals are separated using an electromagnet and then sold to metal recycling firms.

8.3.3 Soil

Soil can be combined with other organic materials that will decompose over time. This procedure produces significant amounts of material, which can be sold, recycled back into the agricultural community, or stored onsite to be used as cover when the site is returned to its pre-incident state. In agricultural areas where chemical fertilizers are used heavily, recovered soil may be too contaminated for use on residential or existing agricultural land. Jurisdictions should consult with their local health department to establish what monitoring and testing is necessary to ensure that soil is not contaminated with chemicals. If the soil is not suitable for agricultural or residential use, it may ultimately need to be disposed of at a permitted landfill.

8.3.4 Construction and Demolition

Concrete, asphalt, and masonry products can be crushed and used as base material for certain road construction products or as trench backfill. Debris targeted for base materials needs to meet certain size specifications as determined by the end user.

Clean wood products used in construction can also be chipped or ground and used as mulch or hog fuel.

8.3.5 Composting

Composting is the controlled decomposition of organic materials, such as leaves, grass, wood, and food scraps, by microorganisms. The result of this decomposition process is compost, a crumbly, earthy smelling, soil-like material. Yard trimmings and food scraps make up about 25 percent of the waste generated in the average household, so composting can greatly reduce the amount of waste that ends up in landfills or incinerators. A section of the TDSR sites should be reserved to receive compost material after a disaster. Composting can be used not only for soil additives for backyard gardens, farmlands, highways, and other landscaping projects, but also for many innovative uses. Jurisdictions using composting to reduce organic material need to be aware of and mitigate several hazards, including spontaneous combustion of piles and vector control for rodents.

8.3.6 Chipping and Grinding

Chipping and grinding reduces the volume of some debris types by as much as 75 percent. This method is commonly used to reduce the volume of disaster debris, including vegetative debris, construction demolition debris, plastics, rubber, and metals. Clean wood can also be reduced and used for mulch, and other debris such as plastic and metals can be chipped to reduce the overall volume of the material prior to transportation or disposal. The benefit of using a reduction method can be increased by identifying alternate uses for the residual material. The ability to use recycled wood chips as mulch for agricultural purposes, fuel for industrial heating, or in a cogeneration power plant helps to offset the cost of the chipping and grinding operations. Jurisdictions using chipping and grinding to reduce the volume of vegetative debris must be careful to ensure that contaminants such as plastics, soil and rocks, and special wastes are not present in the vegetative debris to be processed. Care must also be taken when reducing construction and demolition debris to ensure that it does not contain hazardous materials such as asbestos. Appendix A, *Additional Debris Resources*, lists resources that provide chipping and grinding services.

8.3.7 Hog Fuel Incinerators

Hog fuel is made up of a specific grade of ground-up wood and bark. It varies in size but is generally between 1/2-inch and 6-inch screen size. In the Pacific Northwest, wood and paper processing companies that use hog fuel to fuel boilers have facilities for storing hog fuel. These companies may purchase surplus storm debris that is processed into hog fuel, depending on market conditions and their existing supply, which is lowest in the spring. Depending on the quality of the material used to create the hog fuel, the Puget Sound Clean Air Agency (PSCAA) may need to relax the permit restrictions for any hog fuel burners that burn hog fuel processed from disaster debris. Appendix A, *Additional Debris Resources*, includes a list of hog fuel burners in the Region.

8.3.8 Incineration

Curtain pit incineration, portable incinerators, and controlled incineration in rural areas are all methods for reducing disaster debris. Because of air quality concerns in the Region, incinerating debris is not generally considered a viable reduction strategy. The decision to use incineration as a reduction strategy for some types of debris would be made by the PSCAA, as outlined in Chapter 3, *Legislation and Policies*, of this plan. The following subsections discuss the various incineration methods.

8.3.8.1 Air Curtain Pit Incineration

Air curtain pit incineration offers an effective means to expedite the volume reduction process, while substantially reducing the environmental concerns caused by open-air incineration. The air curtain incineration method uses a pit constructed by digging below grade or building above grade (if a high water table exists) and a blower unit. The blower unit and pit comprise an engineered system that must be precisely configured to function properly. The blower units deliver air at predetermined velocities and capacities. The blower unit must have adequate air velocity to provide a "curtain effect" to hold smoke in and to feed air to the fire below. A nozzle 20 feet long provides air at a velocity of over 120 miles per hour and will deliver over 20,000 cubic feet of air per minute to the fire. The

air traps smoke and small particles and recirculates them to enhance combustion, which takes place at over 2,500 degrees Fahrenheit.

8.3.8.2 Pre-permitted Portable Incinerators

Portable incinerators use the same methods as air curtain pit incinerator systems. The only difference is that portable incinerators use a pre-manufactured pit instead of an onsite constructed earth/limestone pit. Portable air curtain incinerators are the most efficient incineration systems available because the pre-manufactured pit is engineered to precise dimensions to complement the blower system. The pre-manufactured pit requires little or no maintenance compared to earth or limestone constructed pits, which are susceptible to erosion. Portable air curtain units are ideal for areas with high water tables and sandy soils and areas where smoke opacity must be kept to a minimum.

8.3.8.3 Rural Controlled Incineration

Controlled open-air incineration is a cost-effective method for reducing clean, woody debris in rural areas. Jurisdictions should consult with their local fire departments and the PSCCA to determine what permits are necessary for rural incineration. Ash from rural incineration may be used as a soil additive; however, local health departments and agricultural extension personnel should be consulted to confirm whether this is allowed in a jurisdiction. A listing of Agricultural Extensions is listed in Appendix B, *Online Resources*. The controlled open-air incineration option should be terminated if mixed debris enters the waste stream.

8.3.9 Contract Debris Processors

Jurisdictions within the Region may identify contractors to perform such work as recycling, special waste processing, composting, and TDSR site management. It is recommended that jurisdictions evaluate the establishment of pre-positioned contracts for the following services prior to an emergency:

- Vegetation clearance and removal (tree trimming)
- Debris clearance and removal
- TDSR site management and monitoring
- Structure demolition and removal
- Debris reduction
- Debris recycling
- Problem waste disposal
- Hazardous materials disposal

Chapter 10, *Contract Management and Pre-identified Contractors*, discusses contract management in detail, including the possible regulation of debris collection by the WUTC. These issues need to be investigated and resolved before a jurisdiction attempts to prequalify contractors for debris operations.

8.3.10 Additional Contract Resources

Appendix A, *Additional Debris Resources*, lists resources that can be used to process disaster debris following an incident. These firms are available on an emergency basis and can also be contracted via on-call or pre-positioned contracts to handle debris clearance and hauling.

8.4 Problem Waste Processing and Disposal

Problem waste, such as pathogenic waste, white goods, household hazardous waste, or biological or nuclear waste, requires additional handling before it can be processed or disposed of, and will vary depending on the type and scope of the debris-causing incident. During debris processing, problem waste should be removed and stored in a secure location until it can be disposed of properly. Because of their prevalence during debris-causing incidents, several types of waste warrant further discussion:

- **Animal Carcasses:** Animal carcasses pose a threat to public health and require special handling and disposal procedures. During an animal incident the Washington State Department of Agriculture and Washington State Department of Ecology can provide information on establishing the disposal method necessary to meet the needs of the disaster. The Washington Department of Ecology has released guidelines for on-farm composting of livestock[1]. Jurisdictions should consult with their local health district or department to develop strategies for carcass disposal.
- **Asbestos**: Regulations for asbestos handling are well established by several different local, state, and federal agencies, including Ecology and the PSCAA. After a major debris-causing incident, asbestos inspections may not be possible prior to demolition, resulting in an increased risk to public health. Jurisdictions should work with the PSCAA and local public health agencies to ensure waste that possibly contains asbestos is properly handled and disposed of.
- **Electronic Waste (E-waste)**: E-waste may contain a variety of potentially toxic chemicals, including heavy metals and polychlorinated biphenyls (PCBs). EPA has specifically classified cathode ray tube (CRT) monitors as hazardous waste, and other electronic components may also qualify. Whenever possible, E-waste should be separated from other waste and recycled by an E-waste processor.
- **Gypsum Drywall**: When gypsum deteriorates in landfills it can create hydrogen sulfide gas, which poses an explosion and inhalation hazard. Large amounts of drywall are often created during storms and floods. Landfill managers need to be aware of this so the proper precautions can be implemented. If possible, gypsum drywall should be recycled rather than disposed of in a landfill (CIWMB 2001).
- **Household Hazardous Waste (HHW)**: As noted in Chapter 6,*Types of Debris*, HHW is prevalent in disaster debris. Strategies need to be developed to collect and store HHW during disaster debris operations.
- **Human Remains:** Some incidents including CBRNE attacks or pandemic disease may create large amounts of human remains. These remains are the responsibility of the local coroner or medical examiner and are outside the scope of this plan. Emergency managers and debris management specialists should consult with their local coroner or medical examiner to discuss how human remains will be handled during an incident
- **Human Waste**: Following a disaster that disables water, sewer, or septic systems, citizens may have human waste stored in containers that requires disposal. This is

[1] http://www.ecy.wa.gov/pubs/0507034.pdf

considered biohazardous waste that cannot be included in the debris stream. Close cooperation is necessary between emergency managers, local public health officials, and utility personnel to properly collect and dispose of this waste.

- **Treated Wood**: Treated wood includes different types of building material, including telephone poles, railroad ties, fence posts, and wood used to construct docks. Care needs to be taken to ensure treated wood is not chipped, shredded, mulched, composted, incinerated, or disposed of in unlined landfills during processing and disposal.
- **White Goods**: White goods (including refrigerators) are commonly discarded after debris-causing incidents because they no longer function or because of extended power outages that cause their contents to decompose. Refrigerators are often processed in groups to remove the refrigerant along with any food waste, and then recycled.

Whenever possible, jurisdictions should try to segregate hazardous substances from the waste stream as early in processing as possible in order to prevent contamination of larger amounts of waste. Jurisdictions undergoing any cleanup effort that includes hazardous waste should consult with their local hazardous waste staff, public health officials, and EPA to ensure the protection of public health. A list of contractors who process and dispose of problem waste is included in Appendix A, *Additional Debris Resources*, of this plan.

8.5 Temporary Debris Storage and Reduction Sites

TDSR sites are used to temporarily store, sort, and reduce, debris collected during an incident. It is the responsibility of each jurisdiction to locate possible TDSR sites prior to an incident and, if possible, develop a site plan and perform a baseline environmental study for each site. An ideal TDSR site would have the following characteristics:

- Entrance and exit routes that allow for optimal traffic flow
- Inspection towers that allow close inspection of trucks
- Scales to weigh all load when entering and leaving the site
- Clearly identified reduction sites
- A completed site plan
- A complete traffic management plan
- Full utility survey
- Historical assessment
- A completed baseline environmental study

Because the establishment and operation of TDSR sites is a recovery function, it is imperative that all local, state, and federal regulations be followed during site operation. Pre-identifying and assessing TDSR sites prior to an incident will ensure appropriate regulations and permits have been addressed.

Figure 8-1 is an example of a TDSR site layout. FEMA recommends that a standard TDSR site be approximately 100 acres, but the size and layout of individual TDSR sites will vary depending on available locations and the amount of debris created by an incident. Additional information on locating and operating TDSR sites is provided in Appendix E, *Temporary Debris Staging and Reduction Site Planning,* of this plan.

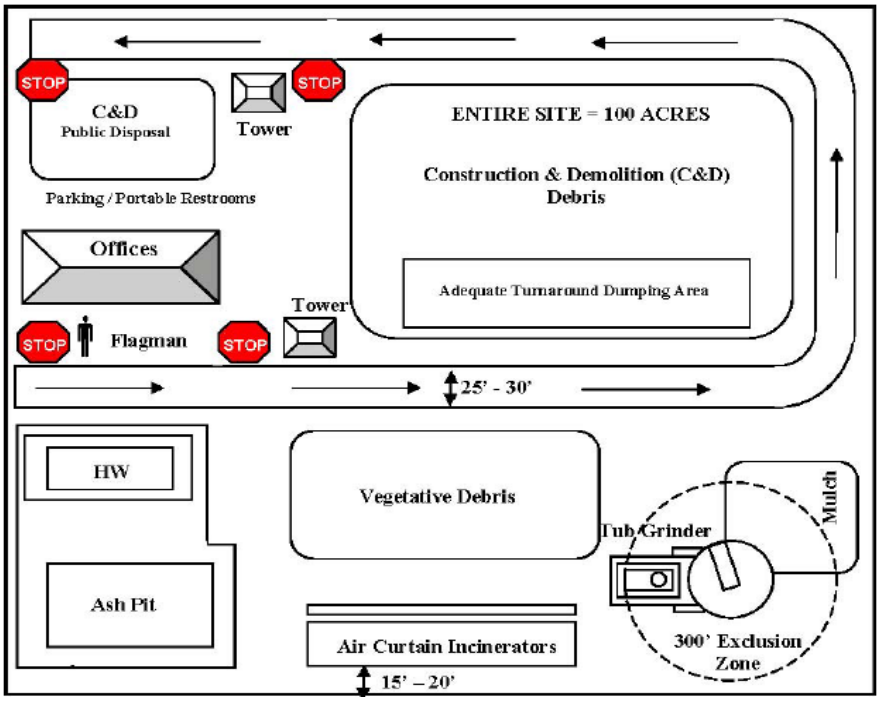

FIGURE 8-1
Example of a TDSR Site Layout

8.6 Debris Hauling and Disposal Operations

Disaster debris that cannot be reduced, reused, or recycled using other strategies must be disposed of in landfills. The most cost-efficient strategy for disaster debris disposal is usually to make use of the region's own or typically used landfills, but disaster debris could easily overwhelm existing landfill capacity. As an example, the 1994 Northridge earthquake in California generated 7 million cubic yards of disaster debris and the 2001 attack on the World Trade Center generated 5 million cubic yards of debris. For comparison, the LRI Landfill in Pierce County, Washington, has a total capacity of 29 million cubic yards and the Rabanco Roosevelt landfill has a total capacity of 120 million cubic yards. If local landfills are not adequate, regional staff should attempt to locate landfills close to the disaster area. A list of area landfills is included in Chapter 7, *Regional Capacities*.

8.6.1 Waste Transportation Alternatives

Alternative transportation methods vary, depending on the size and scope of a disaster. The following subsections describe some alternative transportation methods that may be used.

8.6.2 Rail Transport

A portion of the Region's waste is transported by rail to landfills in Eastern Washington and Eastern Oregon, creating a possible transportation vulnerability following an incident. As displayed in Figure 8-2, there are three primary transportation routes east of the Cascades—Stampede Pass, Cascade Tunnel, and the Columbia Gorge. Because there are multiple rail

routes over the Cascade Mountains, there is some redundancy built into this method and rail transport may be combined with long-haul truck transport to bypass rail disruptions.

8.6.3 Extended Debris Storage

If transportation of debris is only disrupted for a short period of time, it may be most efficient to store and transport waste when normal methods are restored. Pre-identified TDSR sites may be used to store debris if proper handling procedures are used. Proper handling procedures may include limiting debris piles to 15 feet in height, providing 50-foot lanes between piles for fire control access, and ensuring appropriate local health district/department regulations are followed. If extended storage is used, debris transport should be prioritized to remove problem waste and putrescibles. Other waste types, such as inert waste, may be stored for extended lengths of time.

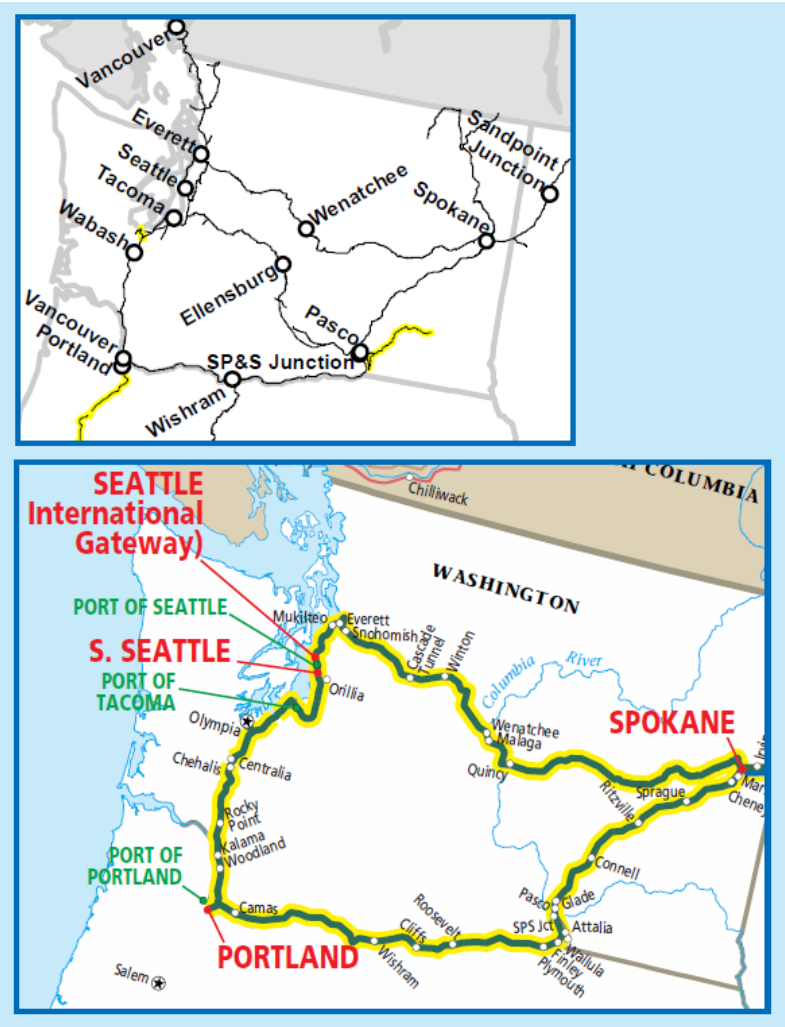

FIGURE 8-2
Rail Transportation Routes and Intermodal Hubs

8.6.4 Long-Haul Truck Transport

If rail transport is disrupted for a significant amount of time, existing truck and container equipment could be used to transport waste to landfills or to an alternate location with access to rail traffic. Container rail-loading facilities include the Ports of Tacoma, Seattle, Everett, and Wenatchee, Washington; Portland, Oregon; and Vancouver, British Columbia, Canada. Figure 8-2 shows major intermodal railroad facilities that could be used to transfer solid waste containers from truck to rail for transport to disposal locations. The major problem with this strategy is the limited number of containers and the additional time it would take to transport waste to its processing or disposal site.

8.6.5 Transportation of Waste via Container Ship

Some jurisdictions (Snohomish County, the City of Seattle) use open-top containers to transport waste from a transfer station to a disposal site. These containers meet International Organization for Standardization (ISO) standards and can be shipped to a seaport, including

the ports of Portland, Oregon; Olympia, Tacoma, Seattle, Everett, and Bellingham, Washington; and Vancouver, British Columbia, Canada. Average container ship capacity varies from 3,000 to 7,000 containers, depending on the size of the port facilities available to load and unload it. Logistical problems associated with this method include the limited number of containers available to haul debris, the equipment needed to offload and transport containers from the seaport from which they are shipped to the final disposal location, and the additional time it would take to transport waste to its disposal site. Because it is difficult to keep water out of open-top containers, sealed containers would be better suited to transport waste.

8.6.6 Transportation and Storage of Waste via Barge

Waste can be stored and transported via barge, but because of logistical challenges this should be considered a last-resort method for handling waste. Transporting and storing bulk waste via barge requires handling resources at both loading and unloading locations. Ports in the Seattle UASI Region are not equipped with these resources, but are outfitted to load waste in sealed containers onto barges. Loading these containers is not as efficient and the space needed to load containers may be at a premium because of other commercial and disaster response uses.

9.0 Mutual Aid and Interlocal Agreements

This chapter outlines the types of agreements that can be entered into with outside resources to provide additional assistance in the aftermath of a debris-causing incident. A request for mutual aid starts at the local level, after a jurisdiction has exhausted existing resources, and moves up through all levels of government. Jurisdictions should inventory their existing resources and agreements as required by the National Incident Management System (NIMS) and then develop the necessary agreements with outside resources prior to an incident to speed response and recovery efforts. Table 9-1 below lists applicable regional agreements.

9.1 Types of Agreements

There are several types of agreements that Jurisdictions can use to share resources, each comes with a different level of commitment by the parties (WAEMD 2001). Table 9-1 provides more details about the availability of existing agreements within the Region.

- **Memorandum of Understanding:** A memorandum of understanding (MOU) is an agreement that specifies mutually agreed-upon expectations between two (or more) entities to collaborate on a project without exchange of funds. MOUs take many forms and may be referred to by other titles (for example, Memorandum of Agreement).
- **Mutual Aid Agreement:** A Mutual Aid Agreement is a written understanding between any type of organization and typically used by local emergency management organizations to provide reciprocal emergency management aid and assistance. Such arrangements are authorized in Chapter 38.52.091 RCW. Mutual Aid Agreements must be consistent with the state comprehensive Emergency Management Plan and program. In an emergency, each signatory local jurisdiction is responsible for providing assistance within their capabilities in accordance with the signed agreement.
- **Interlocal Agreement:** The purpose of an Interlocal Agreement is to permit local jurisdictions to make the most efficient use of their powers by enabling them to cooperate with other local jurisdictions on a basis of mutual advantage. An Interlocal Agreement allows local jurisdictions to provide or receive services and facilities from other local jurisdictions. Interlocal Agreements are in effect a contract and are discussed in Chapter 39.34 RCW.

9.2 Administration of Agreements

Individual jurisdictions may have their own mutual aid or interlocal agreements, which can be used to provide assistance during or after a disaster debris-causing incident. It is the responsibility of each jurisdiction to inventory their current agreements and evaluate their possible use during a debris-causing incident. Because these agreements are legal contracts, they require support from jurisdiction authorities, jurisdiction attorneys, and legal counsel during their creation and ongoing use and maintenance.

TABLE 9-1: EXISTING AGREEMENTS

Agreement	Type	Participants	Participation Requirement	Service Requirement	How Activated	Types of Resources Available
Washington Public Works Emergency Response Mutual Aid Agreement	Mutual Aid	Washington state and jurisdictions	Voluntary	Voluntary		Public Works equipment and staff
Emergency Management Assistance Compact	Mutual Aid	All 50 U.S. states	Voluntary	Assistance is obligatory "provided that it is understood that the state rendering aid may withhold resources to the extent necessary to provide reasonable protection for such state."	Governor proclaims state of emergency, resources requested through WAEMD.	All types of resources, including debris clearance equipment and staff
Washington State Intercounty Mutual Aid Agreement	Mutual Aid	King, Pierce, and Snohomish counties, along with various other counties in Washington, Oregon, and Idaho	Voluntary	Lending county acts as an independent contractor of borrowing county in the performance of voluntary emergency assistance during any type of emergency. Reimbursement will be made by Borrower to Lender for costs and labor incurred by Lender beyond the first 8 hours of an asset's use.	Requests for emergency assistance shall be directed to the designated contact person(s) on the contact list provided by the Party Counties.	Equipment, supplies, personnel, or direct provision of services
Washington State Fire Mobilization Plan	Mutual Aid	Statewide		Voluntary	The local fire chief, through the regional coordinator, makes a request for mobilization to the State Emergency Operations Center. The chief of the Washington State Patrol makes a decision on mobilization in consultation with the governor's chief of staff. Reimbursement by the WSP will take place for any labor or resources expended after a mobilization is declared. Plan expressly notes that it is not a	Firefighters and equipment needed to manage fires, disasters, or other incidents – this is an all-risk agreement.

TABLE 9-1: EXISTING AGREEMENTS

Agreement	Type	Participants	Participation Requirement	Service Requirement	How Activated	Types of Resources Available
					replacement for local mutual aid agreements and the resources available from such agreements must be expended before a mobilization request will be granted.	
Draft Washington State Law Enforcement Mobilization Plan	Mutual Aid	Unknown	Unknown	Unknown	Unknown	Unknown
King County: Solid Waste Interlocal Agreements	Interlocal Agreement	37 jurisdictions	Unknown	Unknown	Unknown	Solid Waste Disposal Resources
King County: Regional Disaster Plan for Private and Public Agencies in King County	Mutual Aid	Plan with 145 signatory private, public, nonprofit, and tribal partners	Voluntary, signatures on file	Resource lending and borrowing are defined in the Omnibus Financial and Legal Agreement.	Local emergency proclamation by jurisdiction. Then request is made.	Any type requested. Must have expended local and zone resources first.

10.0 Contract Management and Pre-identified Contractors

FEMA encourages all jurisdictions to pre-qualify debris removal contractors to ensure that assistance is available immediately after a debris-causing incident. This chapter outlines the process for pre-qualifying these contractors.

Before entering into contract agreements for disaster debris removal, jurisdictions should review and understand the WUTC's role in regulating solid waste collection within its jurisdiction. Chapter 3, *Legislation and Policies*, of this plan summarizes the role of the WUTC in contract waste collection.

10.1 Existing Solid Waste Collection Companies

Jurisdictions should first discuss disaster debris operations with their existing solid waste collection companies to identify what additional resources these companies have available for debris clearance and removal activities beyond their normal capacity to maintain municipal solid waste services. This is especially important for jurisdictions whose solid waste collection is regulated by the WUTC.

10.2 Establishing Additional Pre-Positioned Contracts

After evaluating the resources that solid waste collection companies can provide to assist with disaster debris operations, jurisdictions may need to pre-establish contracts for additional resources to ensure efficient response and recovery following a debris-causing incident. These resources may include the following:

- Rights-of-way and public property debris clearance
- Vegetation clearance and removal (tree trimming)
- Debris clearance and removal
- Collection and processing of problem waste, including white goods
- Debris reduction
- Management of contract debris hauling
- Management and monitoring of TDSR sites

It is important to note that in jurisdictions where solid waste collection is regulated by the WUTC, contracting with additional resources for debris collection may only be pursued if the WUTC-certified hauler is unable to provide service, and only after the contractor has been issued a temporary garbage certificate by the WUTC. The provision of temporary garbage certificates is discussed in RCW 81.77.110.

When selecting companies for pre-positioning contracts, jurisdictions should consider both local and regional contractors to ensure coverage that is appropriate to the scope of the disaster.

10.3 Types of Pre-positioned Contracts

10.3.1 Master and Individual Contracts

Jurisdictions may decide to create a master contract for all phases of debris management or smaller individual contracts for individual tasks. If a master contract is created, a prime contractor may allocate individual portions of work out to subcontractors. Master contracts are advantageous because they can reduce contract administration costs for a jurisdiction, but individual contracts provide jurisdictions with more flexibility to change contract provisions as debris operations are better defined.

10.3.2 Time and Materials Contract

Under a time and materials contract, the contractor is paid based on time spent and resources used in accomplishing debris management tasks. Time and materials contracts are extremely flexible and especially suitable for early debris right-of-way clearance jobs and hot spot cleanups.

For reimbursement purposes, FEMA recommends that the use of time and materials contracts be limited to the first 70 work hours after a disaster. There may be situations where it is practical to use time and materials contracts for periods longer than 70 hours; however, FEMA should review those situations on a case-by-case basis to determine if it is reasonable to extend reimbursement beyond the 70-hour period. An example of a time and materials contract is provided in Appendix G, *Example of Time and Materials Contract for Debris Removal*.

10.3.3 Unit Price Contract

A unit price contract is based on weight (tons) or volume (cubic yards) of debris hauled. This kind of contract should only be used when the scope of work is not well defined. It requires close monitoring of debris collection, transportation, and disposal to ensure that quantities are accurate. A unit price contract may be complicated by the need to segregate debris for disposal. An example of a unit price contract is provided in Appendix H, *Example of Unit Price Contract for Debris Removal*.

10.3.4 Lump Sum Contract

A lump sum contract is used when the scope of work is clearly defined and the areas of work are specifically quantified. Lump sum contracts require the least monitoring by the contracting jurisdiction. An example of a lump sum contract is provided in Appendix I, *Example of Lump Sum Contract for Debris Removal*.

10.4 Contracts Not Eligible for Reimbursement by FEMA

10.4.1 Cost Plus Percentage of Cost

A cost-plus-percentage-of-cost contract is one whereby the contractor is compensated for work performed, such as a time and materials contract, but also compensated an additional percentage of that compensation.

10.4.2 Conditional upon Federal Reimbursement

This kind of contract only reimburses contractors if the region receives federal funding and is not an eligible contract under FEMA guidelines.

10.4.3 Contracts with Debarred Contractors

Debarred contractors are contractors who were found to be in non-compliance with prevailing wage law. The Region will not be reimbursed on contracts made with companies that are on the Washington State Department of Labor and Industries Debarred Contractors list (see Appendix B, *Online Resources*, for the link to this Web site).

10.5 Pre-incident Activities

Prior to an incident, jurisdictions should identify internal and external resources required for debris operations and establish contracts with any external resources, as follows:

- Identify trained debris monitors to observe and document contractor activities. At a minimum, these monitors must be stationed at all pickup and disposal sites. Monitors may be full-time employees or hired as temporary workers during an incident. Because of FEMA reimbursement regulations, it is suggested that contract employees be used to fill these positions.
- Identify contractors with sufficient resources to assist with debris cleanup and hauling, including capabilities for equipment and personnel, bonding and insurance, availability, and geographic location.
- If possible, establish on-call contracts for debris cleanup and hauling services.

10.5.1 Pre-qualifying Contractors

While it may not be feasible to enter into contracts prior to an incident, FEMA recommends jurisdictions develop a list of pre-qualified contractors that provide disaster debris management services and can be called after an incident has occurred. At a minimum, jurisdictions should consider the following factors when prequalifying contractors:

- Contractor's ability to perform debris operations
- Amount and location of equipment and employees
- Level of availability
- After-hours contact information
- Appropriate insurance and bonding

10.6 Operational Contract Monitoring

All jurisdictions that contract for debris operations should establish a contract monitoring plan. The purpose of this plan is to protect a municipality's financial interest. Monitoring debris removal operations achieves two objectives:

- Verifies that the work completed by the contractor is in the contract scope of work.
- Provides the required documentation for Public Assistance grant reimbursement.

Failure to document eligible work and costs may jeopardize Public Assistance Program grants. In federally declared disasters, FEMA periodically validates a region's monitoring efforts to ensure that eligible debris is being removed and processed efficiently. Debris eligibility requirements are discussed in Chapter 11, *Eligibility for Funding*, of this plan.

10.6.1 Unit Price Contracts

A unit price contract requires that all trucks be accurately weighed or measured and numbered, and that all truckloads be documented. Full-time trained contract monitors are usually necessary for this type of contract because an accurate account must be kept of the actual quantities of debris transported (in either cubic yards or tons). Monitors must be available at debris pickup locations to ensure the debris being picked up is eligible. In addition, this type of contract requires the contractor to provide or construct an observation stand at all reduction and disposal sites so the contract monitor can certify the load. If scales are used, monitors must also ensure that proper weights are registered before and after trucks have been emptied. The following conditions for unit price payments also apply:

- If unit price payments are based on weight, a truck scale must be available at the disposal site for weighing trucks. The weight of an empty truck must also be confirmed.
- If unit price payments are based on volume, monitors must verify truck capacities and inspect trucks for proper loading and compaction.

10.6.1.1 Load Tickets

The term "load ticket" refers to the primary debris-tracking document. A load ticket system tracks the debris from the original collection point to the TDSR site or landfill. By positioning debris monitors at each point of the operations (collection, TDSR site, and/or final disposition), the eligible scope of work can be properly documented. This is how jurisdiction should document and track debris from the initial collection location to the TDSR and final disposal locations. If a jurisdiction uses a contract hauler, this ticket often verifies hauling activities and can be used for billing purposes. Load tickets should be multi-copy and sequentially numbered. All copies of load tickets presented for payment must match in order for payments to be made.

10.6.1.2 Truck Certification and Periodic Measuring of All Trucks to Calculate Capacity

Prior to beginning contract work, each truck must be certified. Certification includes recording the following:

- Volume of the truck bed in cubic yards or empty truck weight
- Truck license number
- Any identification number assigned by the owner
- Short description of the truck

Monitors may need to be trained in order to measure truck capacities for certification purposes. Recertification of the hauling trucks on a random and periodic basis should be implemented for contract compliance and reimbursement considerations. A listing of certified trucks should be maintained by debris monitors to ensure that truck identifications have not been altered. A sample truck certification form is included in Appendix F, *Sample Forms for Debris Tracking*.

10.6.2 Awareness of Improper Contractor Strategies

Monitors must be aware of the following techniques, which have been used by contractors to take advantage of unit price contracts during the debris cleanup process:

- Reporting improper truck volumes
- Adding improper debris to a load to increase weight (i.e., steel, boulders, excess soil, or concrete)
- Soaking debris with water
- Tipping half of the load
- Switching a truck number
- Using large fuel tanks that are almost empty on initial weigh-in and full when delivering debris
- Adding steel plates or other weights to the bottom of the truck bed

10.6.3 Considerations for Time and Materials Contracts

For time and materials contracts, jurisdictions must document the length of time that equipment and personnel is used, and must ensure that equipment and personnel are being used efficiently. FEMA does not reimburse for "down time" of equipment or personnel.

10.7 Post-incident Activities

Following an incident, jurisdictions will need to ensure that all reimbursement documentation is completed and that documentation is filed in accordance with the reimbursing agency's record-keeping policy. Jurisdictions must keep all records for 3 years after the last application for assistance is submitted to FEMA (14 CFR § 13.42). The performance of debris contractors and contract vehicles should be reviewed as part of the incident AAR and any necessary changes implemented.

11.0 Eligibility for Funding

This chapter outlines the current funding eligibility requirements for debris removal under the Public Assistance Program, as described in FEMA 325 Debris Management Guide (FEMA 2007; see also Appendix B, *Online Resources*). The information may in some cases be different from local requirements, and is meant to provide baseline guidance to jurisdictions within the Seattle UASI Region when drafting their own funding eligibility requirements. Note that FEMA's funding policy changes over time, so it is important to consult FEMA's debris management documentation during every incident or during annual plan review.

11.1 Debris Removal from Public Property

Debris removal work from public property is usually eligible for FEMA assistance under the Public Assistance Program. Eligible debris removal work must meet the following criteria:

- The debris was generated by a major disaster.
- The debris is located within a designated disaster area on an eligible applicant's improved property or right-of-way.
- The debris removal is the legal responsibility of the city or the county.

Debris on public property that is not eligible for FEMA assistance under the Public Assistance Program includes the following:

- Unimproved property or undeveloped land
- Debris removal from a facility that is not eligible for funding under the Public Assistance Program
- Debris on federal lands or facilities that are the authority of another federal agency or department

11.2 Debris Removal from Private Property

Private property debris removal (PPDR) is generally not eligible for reimbursement under FEMA's Public Assistance Program because debris on private property does not typically present an immediate health and safety threat to the public. Additionally, debris removal from private property is generally the responsibility of individual private property owners and other sources of funding such as insurance are commonly available to property owners to cover the cost of work. However, if private property owners move disaster-generated debris to the public right-of-way, the costs associated with removing that debris from the right-of-way may be eligible under the Public Assistance Program. Debris management planners need to consider when and how private property owners can dispose of their disaster debris and make appropriate plans prior to a debris-causing incident including collection and public communication strategies.

When large-scale debris-causing incidents cause mass destruction and generate large quantities of debris over vast areas, debris on private property may pose health and safety threats to the public-at-large. If private property owners are not available because they have evacuated, state or local government may need to enter private property to remove debris considered to be an immediate threat to the life, health, and safety of its residents. In such situations, the FEMA Federal Coordinating Officer (FCO) is authorized to approve the provision of public assistance for removal of debris from private property when it is considered to be in the public interest.

Eligible debris removal work from private property may include removal of the following:

- Large piles of disaster-generated debris in the living, recreational, and working areas of properties
- Disaster-generated debris obstructing primary ingress and egress routes to improved property
- Debris created by removal of damaged interior and exterior materials from improved property
- Household hazardous wastes
- Disaster-generated debris on private roads and/or streets of a gated community, provided that the removal of the debris has become the legal responsibility of an eligible jurisdiction

Eligibility also includes disaster-damaged limbs and leaning trees in danger of falling on improved property, primary ingress or egress routes, or public rights-of-way. However, tree removal carries some qualifying conditions described below:

- Hazardous tree removal is eligible only if the tree is greater than 6 inches in diameter and:
  - The tree has more than 50 percent of the crown damaged or destroyed
  - The tree has split trunk or broken branches that expose heartwood
  - The tree itself is leaning at an angle greater than 30 degrees and shows evidence of ground disturbance
- Hazardous limb removal is eligible only if the limb (hanger) is greater than 2 inches in diameter measured at the point of break.

Ineligible debris removal on private property includes the removal of the following:

- Debris from vacant lots, forests, heavily wooded areas, unimproved property, and unused areas
- Agricultural debris used for crops or livestock
- Concrete slabs or foundations-on-grade

- Reconstruction debris consisting of materials used in the reconstruction of disaster-damaged improved property

11.3 Debris Removal from Private Commercial Property

Debris removal from commercial property and the demolition of commercial structures generally are not eligible for public assistance grant funding. Commercial enterprises are the exception because they have insurance that will cover the cost of debris removal and/or demolition. However, in some cases, as determined by the FCO, debris removal from private commercial property and/or the demolition of private commercial structures by a state or local government may be eligible for FEMA reimbursement only when the removal is in the public interest.

Industrial parks, private golf courses, commercial cemeteries, apartments, condominiums, and mobile homes in commercial trailer parks are generally considered commercial property.

11.4 Processing and Disposal

Landfill tipping fees usually include fixed and variable costs along with some special taxes or fees assessed by the jurisdiction. Examples of variable costs include costs for labor, supplies, maintenance, utilities, and gas or recovery systems. Fixed costs generally include equipment, construction, permits, landfill closure, post closure, and amortized costs for ancillary landfill building structures.

Eligible landfill costs are limited to the variable and fixed costs that are directly related to landfill operations. Jurisdictions may incorporate special taxes or fees into the landfill tipping fee to fund government services or public infrastructure. When tipping fees include such costs, those costs are not eligible for public assistance grant funding.

12.0 Public Notification and Communication Plan

This section is designed to help jurisdictions in the Seattle UASI Region develop a plan to communicate effectively with the public before, during, and after a debris-causing incident, and to collaborate with neighboring jurisdictions to deliver coordinated public messages.

12.1 Communication and Public Education Strategy Prior to an Incident

Prior to an event, Jurisdictions should develop a public information campaign around disaster debris-causing incidents. The campaign is a coordinated effort to provide information to jurisdiction employees, stakeholders, and the public prior to, during, and after a debris-causing incident. Jurisdictions should develop a public information campaign that introduces debris-causing incidents and includes the following:

- Identification of a debris-causing incident communications strategy
- Creation of debris management presentation designed for different audiences including policy makers, jurisdiction employees, and community groups.
- Development of material to be passed out prior to a disaster including pamphlets and fact sheets, press releases and tie-ins with other jurisdiction public information campaigns.
- Identification of anticipated issues during an incident through message mapping, and creation of talking points, press releases, and disaster specific information.

12.1.1 Message Mapping

Message mapping is a technique used to identify anticipated issues during a debris-causing incident and creates key messages that officials can use when providing information to the public prior to, or during an incident. Ideally, public information officers throughout the Seattle UASI region work together to develop common message maps for debris causing incidents.

To begin a message map, a group of staff identifies types of debris causing incidents, such as an earthquake and flood. Next the group brainstorms all the possible questions the public may ask during the identified incident. After that the questions are grouped into similar topics and related categories. Finally, three key messages are created, including at least two supporting facts for each category. These messages should be used when creating communications prior to and during an emergency to create continuity in debris management communications.

12.1.2 Identification of Public Information Processes and Protocols

Identification of common process and protocols is important in providing a coordinated public message. Public Information Officers (PIO) in the Seattle UASI Region should consider the following questions when planning within their jurisdiction and at a regional level with neighboring jurisdictions:

- Who will have the lead responsibility for public messaging?
- Who will have decision-making authority for public messaging?
- Which department within a jurisdiction will release messages to the public?
- What guidelines will be used when crafting public information messages?
- How will messages be coordinated between jurisdictions?
- How will consistency be maintained between jurisdictions?

12.1.3 Develop Materials to be used During an Incident

Another element that supports success of this plan is to develop types of public information prior to an incident that helps to ensure communication with the public is systematic, consistent, and relevant. In this way, the public receives clear and consistent messages throughout the incident and recovery phases of the operation.

The first step for developing public information and messages is to define the communication objective. Consider the following questions:

- Who are your audiences, both primary and secondary?
- What behaviors of your audience do you want to influence?
- What knowledge of your audience do you want to influence?
- What attitudes of your audience do you want to influence?
- What will help manage the public health threat?
- What do you need to accomplish?

At times, the use of different communications procedures by different jurisdictions can frustrate and confuse the public. To prevent this, common language and coordinated messages should be used in communications. Messages, at a minimum, should be:

- Clear, direct, and simple so that all residents in the Seattle UASI Region understand their meaning
- Free of technical jargon and acronyms
- Consistent with expert understanding of the crisis
- Distributed in more than one language
- Appropriate in tone and appeal for the intended audience; and
- Responsive to audience concerns

The following elements should be avoided when developing public messages:

- Technical jargon or unnecessary filler. It only complicates your message and alienates the audience.

- Condescending or judgmental phrases.
- Attacks. Avoid attacks against individuals and organizations—stay focused on issues.
- Promises or guarantees. For example, rather than, "We are protecting the public," say, "We are working to protect the public."
- Speculation that could be mistaken for fact.
- Discussion of money. Don't give the appearance that financial considerations outweigh concerns and obligations to public health and safety.
- Humor. The public may believe you don't take the situation seriously or that you don't care about their safety and health. Or they may get the impression that the risk is not serious. Or they may be offended that you can joke about a serious concern.

12.1.4 Developing Messages in Alternate Languages and Formats

When developing message materials, a jurisdiction should include languages likely to be spoken in the community. Based on community demographics in the Seattle UASI Region, messages may need to be developed in the following languages:

- English
- Spanish
- Korean
- Ukrainian
- Chinese
- Vietnamese
- Russian
- Somali
- Tagalog

Messages should also be crafted in alternate formats to target members of the community with special needs.

12.1.5 Distribution Strategy

Another key step in effective messaging is identifying methods for disseminating information to the public. The following is a list of suggested ways to communicate pertinent information:

- Regional Media – Local television, radio, newspapers, or community newsletters
- State and City Internet Sites – Displays of clear links to debris information flyers for printing
- Online Web sites and notification systems such as the Regional Public Information Network (RPIN), or the Northwest Warning Alert and Response Network (NWWARN) (see Appendix B, *Online Resources*, for information about accessing these networks)
- Public Forums – Interactive meetings at town hall or shopping mall kiosks

- Direct Mail Products – Door hangers, direct mail, fact sheets, flyers within billings, and billboards
- Hand delivery of messages, fact sheets, flyers to homes, shelters, community centers, or other temporary housing locations
- A hotline available both in and/or outside the Region for the public to call for debris management information, including pickup locations and disposal sites open to the public for various types of debris
- Megaphones and public address systems
- Posting on Web sites or bulletin boards at libraries, fire stations, and other public areas

Developing and maintaining a current contact list for the media (television, radio, cable access, ham operators, newspapers, neighborhood newsletters), public information officers, jurisdictional leads, and key decision-makers will make message distributing during an incident much easier.

Depending on the nature of an incident, some modes of communication will be more appropriate than others. For example, people may not have access to television or the Internet if the power is out; public forums may not be appropriate if roads are not passable.

12.1.6 Key Issues to Consider

Jurisdictions should use a technique such as message mapping to identify all issues that may require messaging during an incident. Listed below are some ideas for ideas for creating message maps:

- How will contaminated waste be collected?
- What kind of health threat does contaminated waste pose for citizens?
- How should citizens collect human waste if the sewer system is inoperable?
- How will waste such as putrescibles, household hazardous waste, and human waste be handled and disposed of?
- Where should citizens put debris and how will it be collected?

If curbside collection:

- Will only certain types of debris be collected (will specific debris such as putrescibles be collected in the days following a disaster)?
- How will the debris be collected?
- How should citizens sort or separate their debris, especially hazardous waste?
- What are the schedules and the routes for collection?
- What is the final collection date for streets, sectors, or subdivisions?

If collection centers:

- Where are the collection centers?
- Will residents be charged a fee to use the collection center?
- What are the daily collection center hours?
- Is debris to be segregated at the collection centers?
- What types of debris will be accepted at the centers?
- How long will the collection centers accept disaster-related debris?

For TDSR sites:

- Where can a resident find a map of the TDSR sites for public debris drop-off of household hazardous waste, construction and demolition debris, etc.? Are these areas segregated and well marked for vehicular traffic?
- Will residents be charged a fee to use the TDSR sites?
- Will residents be restricted as to how much disaster-related debris can be dropped off at the TDSR sites?
- Will the TDSR sites have burning, chipping, or grinding operations? If so, during which hours will these activities take place? Address any environmental concerns the public may have as well.
- How long will residents be able to bring their disaster-related debris to the TDSR sites?
- How long will the TDSR sites be open to process (reduce/recycle) debris?
- Are there traffic changes that will impact the general public due to the location or operation of the TDSR sites?

12.1.7 Addressing Concerns and Complaints

How well a jurisdiction identifies and responds to the public's issues and concerns following an incident is important for building long term trust within the community. Prior to an incident, jurisdictions should identify strategies for addressing public concerns during an incident including:

- A toll-free number that can be activated during an incident and staffed to provide information and route requests.
- An information center at an accessible location for walk-up questions and requests.
- Teams of jurisdiction staff who can travel through neighborhoods distributing information.

12.2 Public Information Strategy during an Incident

The jurisdiction's public information staff will provide information to media outlets and the public during an incident. These activities may be provided solely by a single jurisdiction or through cooperation of multiple jurisdictions.

12.2.1 Coordination with the Joint Information Center (JIC)

Communications should be coordinated through the Joint Information Center (JIC) or Joint Information System (JIS); if a JIC or JIS has not been established, coordination should take place through each jurisdiction's Public Information Officers (PIOs).

If a JIC is established during a debris-causing incident, a debris liaison or technical specialist should be available to the JIC to assist the PIOs. The debris operations liaison can provide current information on such topics as:

- Cleanup instructions
- Status of cleanup
- Locations of drop-off or collection sites
- How to source-separate waste
- Handling procedures
- Illegal dumping provisions
- Addressing complaints regarding debris piles or illegal dumping

12.3 Reviewing and Updating Public Information Strategy

The public information strategy should be evaluated after each disaster. Planning staff should assess whether the public information strategy addressed the needs of the community in a clear and timely manner.

Changes should be made in the public information strategy to reflect lessons learned from a disaster. The strategy should also be updated annually to reflect advances in communications technology and major policy changes in solid waste processing.

It is important to note that the public will likely assume the strategy used in one incident will be appropriate for use in the next one. If changes are made to the debris management program, these changes will need to be communicated to the public as part of a public information campaign.

13.0 Staff Development and Responsibilities

This chapter lists staff roles that jurisdictions in the Seattle UASI Region will need to manage debris removal in the event of a disaster. This chapter describes the specific roles that jurisdiction staff may assume to plan for and respond to debris-causing incidents in order to ensure efficient response and recovery operations.

13.1 Staff Development

Each jurisdiction should assign staff to develop and maintain their operational disaster debris management plans and support debris management operations during an incident. Staff should be assigned to these roles prior to an incident so that proper training and planning can take place.

13.1.1 Plan Ownership and Maintenance

A single person or group within each jurisdiction should be responsible for the creation and maintenance of an operational disaster debris management plan for their jurisdiction. This person or group is responsible for directing the creation of the plan and ensuring it is updated and exercised based on the specifications within the plan. Appendix D, *Operational Debris Management Plan Template*, provides jurisdictions with a template to being the creation of their jurisdiction's operational disaster debris management plan.

13.1.2 Debris Operations Staff

Debris operations staff are responsible for directing debris operations during and after an incident. During an incident, staff with debris management experience may need to assume one or more roles, including the following:

- **Debris Management Subject Matter Expert (SME):** A debris management SME provides information and advice to incident command staff working in the operations and planning sections to guide disaster operations.
- **Debris Collection Supervisor**: A Debris Collection Supervisor oversees collection activities prior to arrival at the disposal site and coordinates the debris routing, staffing, and field reporting activities.
- **Debris Removal Manager**: A Debris Removal Manager manages and coordinates debris removal activities related to an incident, and ensures communication among other members of the disaster management team, communication of project status activity and reporting, and dissemination and implementation of policy directives to debris removal personnel.
- **Debris Site Supervisor**: A Debris Site Supervisor manages a TDSR site and is responsible for overseeing waste separation and environmental protection concerns, as well as filling out paperwork and reporting documentation.

- **Finance, Administration, and Logistical Staff:** Tracks time for personnel and equipment, tracks incident costs, assists with contracting and purchasing resources, completes documentation required for reimbursement of expenses, and checks in and demobilize resources.

13.2 Other Specialized Staff Resources

Additional specialized staff may be needed to act as technical specialists during planning, response, and recovery for a debris-causing incident. These include the following:

- **Quality Assurance Personnel**: Quality Assurance Personnel ensures the cost-effective and efficient monitoring of response and recovery operations.
- **Structural Engineer**: A Structural Engineer oversees, inspects, and assesses impacted structures and makes appropriate recommendations on condemnation and demolition of buildings.
- **Legal Staff**: Legal staff leads review and all legal matters in the debris management planning process. In addition to advising the debris management planning staff, the following tasks must also be performed by the legal department:
  - Contract review
  - Rights-of-entry permits
  - Community liability
  - Indemnification
  - Condemnation of buildings
  - Land acquisition for TDSR sites
  - Site closure/restoration and insurance
- **Public Information Officer**: A PIO familiar with debris management issues should be assigned to the Incident Command staff, JIC or JIS, as necessary. Responsibilities include coordinating with other public information officers of other agencies to keep the public informed about all debris removal activities and schedules. Immediately after a disaster and continually throughout the removal and disposal operation, the PIO should arrange for public notification of all ongoing and planned debris clearance, removal, and disposal activities. Additional information on public information strategies in included in Section 12, *Public Notification and Communications Plan.*

13.3 Training and Exercises

To ensure consistent and comprehensive debris management operations, all jurisdictions in the Seattle UASI Region should periodically review the Disaster Debris Management Plan with all potential plan participants, including private companies franchised or contracted to provide debris management service during a disaster.

13.3.1 General Emergency Management Training

Staff participating in disaster debris management operations should have general emergency management training, as well as position-specific training depending on their roles and as identified in their jurisdiction's NIMS implementation and training plan.

General emergency management training requirements are developed as part of the NIMS. Identified staff should complete the following courses:

- IS-700 NIMS: An Introduction (available online)
- IS-800 NRP: An Introduction (available online)
- ICS-100: Introduction to NIMS ICS for Operational First Responders (available online)
- ICS-200: Basic All-Hazards NIMS ICS for Operational First Responders (classroom)
- ICS-300: Intermediate NIMS ICS[2] (classroom)

These requirements are listed as part of the Fiscal Year 2007 NIMS Training Requirements and the 2008 Five-Year NIMS Training Plan. Additional information on position-based NIMS training requirements is available from FEMA (see Appendix B, *Online Resources*, for more information on NIMS training requirements).

13.3.2 Position-Specific Training

Specific training may be required depending on specific staff roles and positions. FEMA provides several online classes that may be applicable to debris management staff, including *IS-632, Introduction to Debris Operations, in FEMA's Public Assistance Program*, and *IS-630, Introduction to the Public Assistance Program. FEMA's Emergency Management Institute* offers classroom training in debris management *(E202 Debris Management).*

13.3.3 Exercises

Procedures for disaster debris removal can be tested and exercised through discussion-based or operational-based exercises. The purpose of these types of tests and exercises is to determine the overall efficiency and effectiveness of the operational procedures in a disaster scenario. These procedures can be exercised separately, or as part of another exercise. At a minimum, operational exercises should be conducted every 4 years. Plans should be modified based on AARs and corrective-action reports.

13.4 Credentialing and Resource Typing

As part of federal NIMS compliance objectives (FEMA 2008b), the United States Department of Homeland Security (DHS) is currently developing a nationwide credentialing system and position-specific resource typing metrics that will provide positive identification and verify baseline knowledge and experience criteria for emergency response and recovery professionals. Some of these criteria will be specific to debris management. Jurisdictions should work with the WAEMD to adopt a credentialing system that is compatible with the NIMS and s tracks the position descriptions and proposed qualifications of all staff who will participate in emergency management operations and disaster debris operations.

[1] ICS-300 is recommended for strike team leaders, task force leaders, unit leaders, division/group supervisors, and branch directors, and is recommended for emergency operations center staff (FEMA 2008a).

14.0 References

- American Bar Association. 2005. *Comments of the Section of Environment, Energy, and Resources of the American Bar Association*. Access at: http://www.abanet.org/environ/ katrina/ Whitepaper.pdf. American Bar Association, Chicago, IL. November 2005.
- City of Seattle, 2007. *Disaster Debris Management Plan – Final Draft*. Seattle, WA
- CIWMB. 2001. *Drywall Recycling*. Access at: http://www.ciwmb.ca.gov/ publications/ condemo/43195069.doc. California Integrated Waste Management Board.
- Clinton, President William. May 22, 1998. *Presidential Decision Directive/NSC-63. Critical Infrastructure Protection*. Access at http://www.fas.org/irp/offdocs/pdd/pdd-63.htm.
- DHS. 2004a. *Essential Support Function 3: Public Works and Engineering Annex, National Response Plan*. Department of Defense, U.S. Army Corps of Engineers, Department of Homeland Security. Access at http://www1.va.gov/emshg/docs/national_response_ plan/files/ESF3.pdf, updated December 2004.
- DHS. 2004b. *Essential Support Function 14: Long-Term Community Recovery and Mitigation Annex, National Response Plan*. Department of Defense, U.S. Army Corps of Engineers, Department of Homeland Security. Access at http://www1.va.gov/emshg/docs/ national_response_plan/files/ESF14.pdf, updated December 2004.
- FEMA. 2007. *FEMA 325 Debris Management Guide*. Access at http://www.fema.gov/ government/grant/pa/policy.shtm, dated July 2007. Federal Emergency Management Agency.
- FEMA. 2008a. *NIMS Implementation Tips of the Week – May 9 – ICS 300*. Access at: http://www.fema.gov/emergency/nims/compliance/tip_050907.shtm. Last updated: May 9, 2007. Federal Emergency Management Agency.
- FEMA. 2008b. *FY 2008 (October 1, 2007 – September 30, 2008) NIMS Compliance Objectives and Metrics For States and Territories*. Access at: http://www.fema.gov/library/file?type= publishedFile&file=fy_2008_nims_compliance_objectivesmetrics_state_022008.pdf&filei d= c9420250-e4a7-11dc-ae21-001185636a87.
- FEMA and State of Washington. 2003. *Greenbook: Environmental Considerations and Contacts – Severe Storms and Flooding*. FEMA-1499-DR-WA; Version 12-16-03. Federal Emergency Management Agency and Washington State Emergency Management Division.
- King County. 2001. *Final Comprehensive Solid Waste Management Plan*. Access at http://www.metrokc.gov/dnrp/swd/about/Planning/documents-planning.asp#comp.

14. References

- King County. 2003. *King County Emergency Management Plan*. Access at http://www.metrokc. gov/prepare/programs/countyplan.aspx.
- King County. 2004. *King County Regional Hazard Mitigation Plan*. Access at http://www.metrokc.gov/prepare/programs/hazmit.aspx.
- King County. 2006. *Disaster Debris Management Operating Plan*. King County, Seattle, WA.
- Pierce County. 2000 and 2007. *Tacoma-Pierce County Solid Waste Management Plan and Supplement*. Access at http://www.co.pierce.wa.us/pc/services/home/environ/pdf/solidwaste/pdf/2000plan.htm.
- Pierce County. 2004. *Pierce County Natural Hazard Mitigation Plan*. http://www.co.pierce.wa.us/pc/abtus/ourorg/dem/EMDiv/MitPCP.htm.
- Snohomish County. 2004. *Comprehensive Solid Waste Management Plan*. Snohomish County, Everett, WA.
- Snohomish County. 2005. *Natural Hazards Mitigation Plan*. Access at http://www1.co.snohomish.wa.us/Departments/Public_Works/Divisions/SWM/Work_Areas/River_Flooding/Planning/Countywide, dated March 2005.
- Snohomish County. 2007. *Debris Management Plan*. Snohomish County, Everett, WA.
- SPU. 2004. *Seattle's Solid Waste Plan: On the Path to Sustainability – 2004 Plan Amendment*. Seattle Public Utilities, Seattle, WA.
- U.S. EPA. 2008. *Local Emergency Planning Committee (LEPC) Database*. Access at http://yosemite.epa.gov/oswer/LEPCDb.nsf/HomePage?openform. U.S. Environmental Protection Agency.
- WAEMD. 2001. *Mutual Aid and Interlocal Agreement Handbook*. Access at: http://www.emd.wa.gov/plans/documents/MutualAidHandbook.pdf . Washington Military Department Emergency Management Division. January 2001.
-